OE ENERGY MARKET SNAPSHOT

Northeast States Version – October 2008 Data

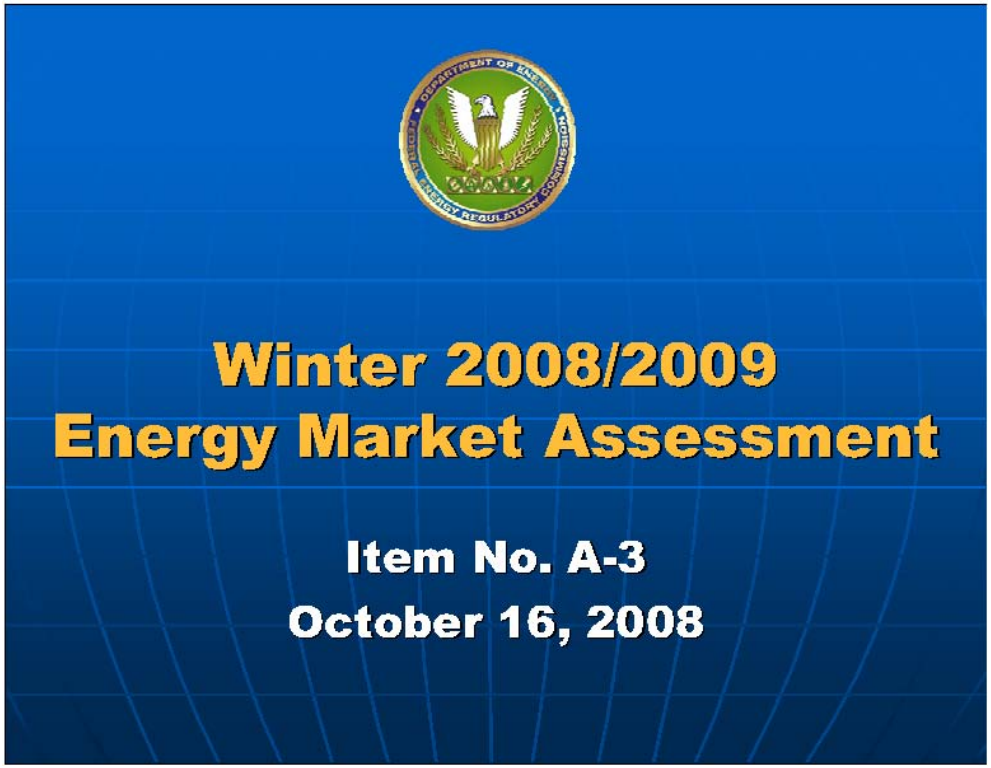
- **Special Reports**
- **Electricity Markets**
- **Natural Gas and Fuel Markets**

Office of Enforcement
Federal Energy Regulatory Commission
November 2008

Special Reports:

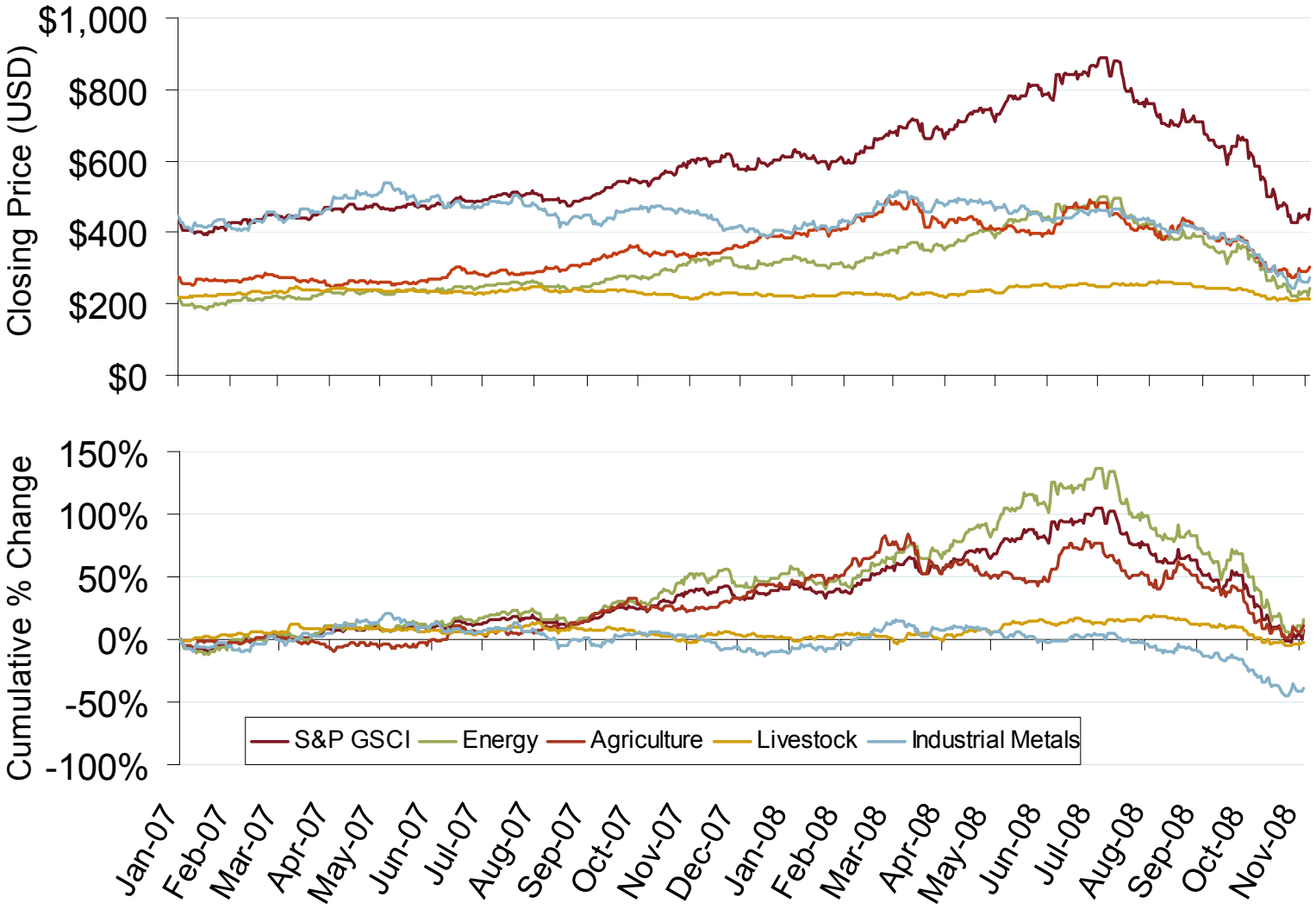
- **Winter 2008/2009 Energy Market Assessment**
- **Financial Markets Report**

Federal Energy Regulatory Commission • Market Oversight @ FERC.gov



http://www.ferc.gov/market-oversight/mkt-views/2008/10-16-08.pdf

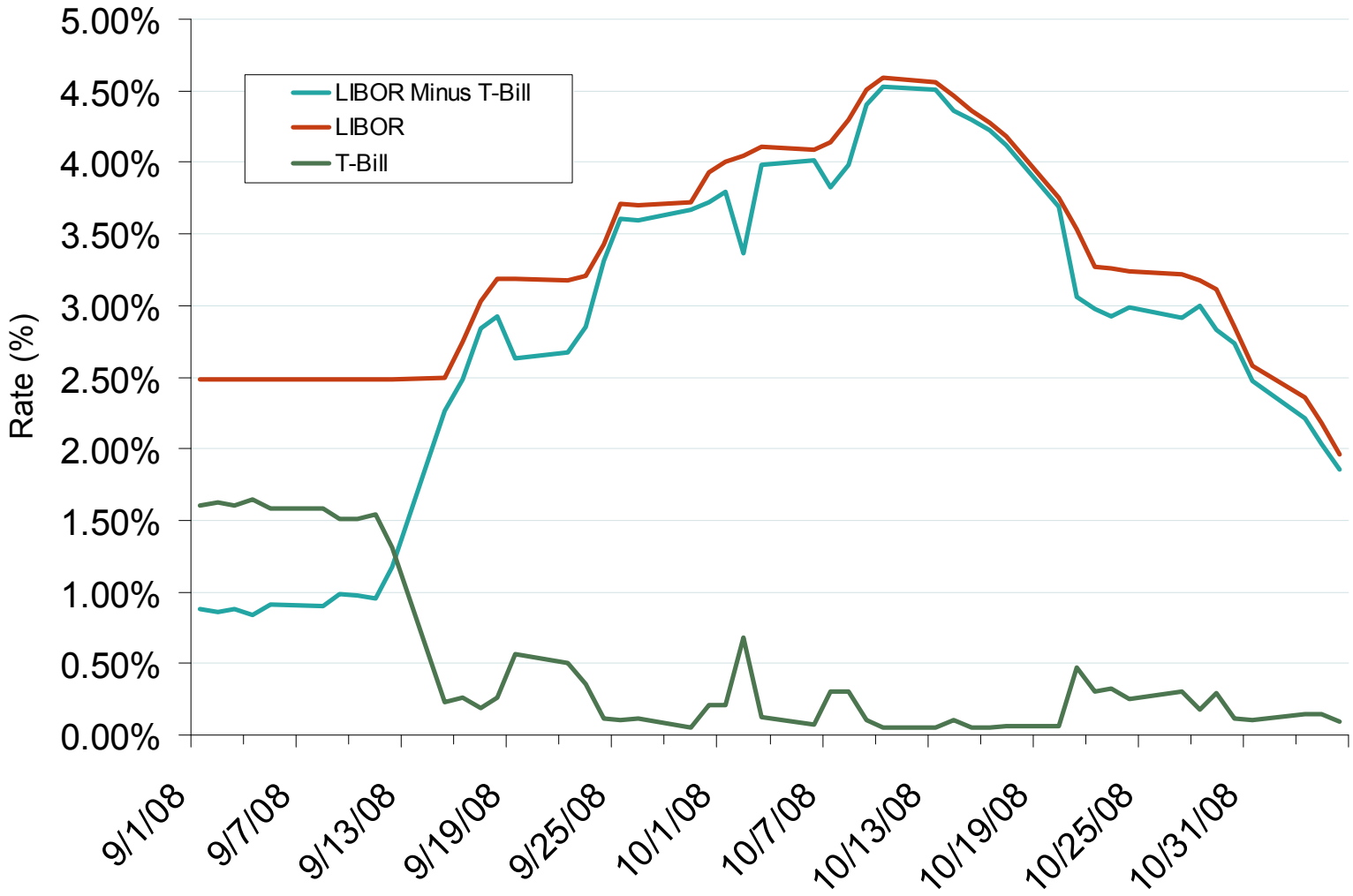
S&P Goldman Sachs Commodity Index Official Closing Price



Source: Bloomberg Data

Updated November 13, 2008

One Month LIBOR and One Month US Treasury Bill Rates



Source: Derived from Bloomberg data.

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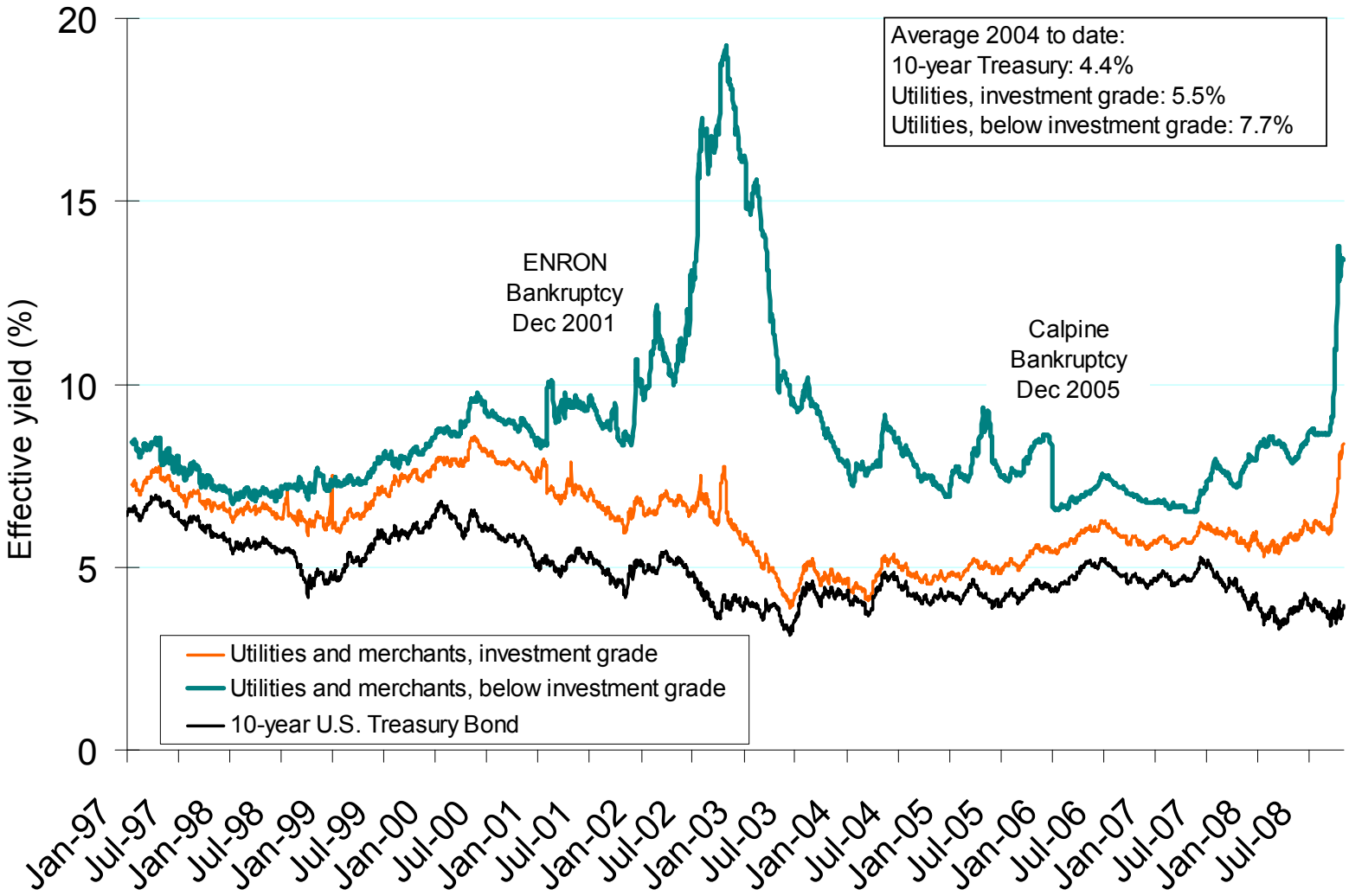
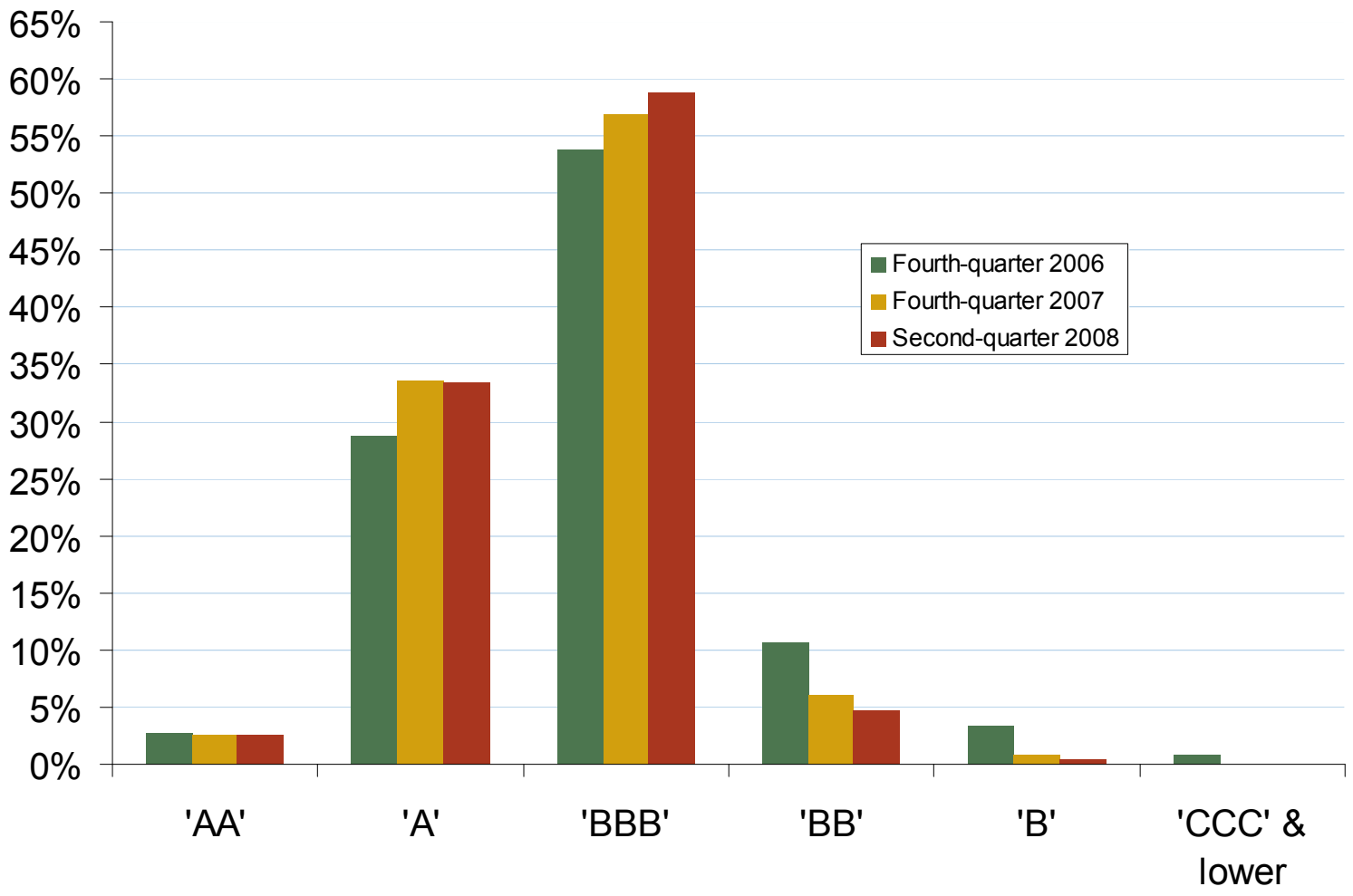
Yields of Utilities, Merchants and Ten Year Treasury Bonds



Source: Derived from Merrill Lynch Index U.S Corporates, Gas and Electric Utilities and Bloomberg data.

Updated November 7, 2008

U.S. Electric and Gas Utility Ratings Distribution



Source: Derived from Standard and Poors data.

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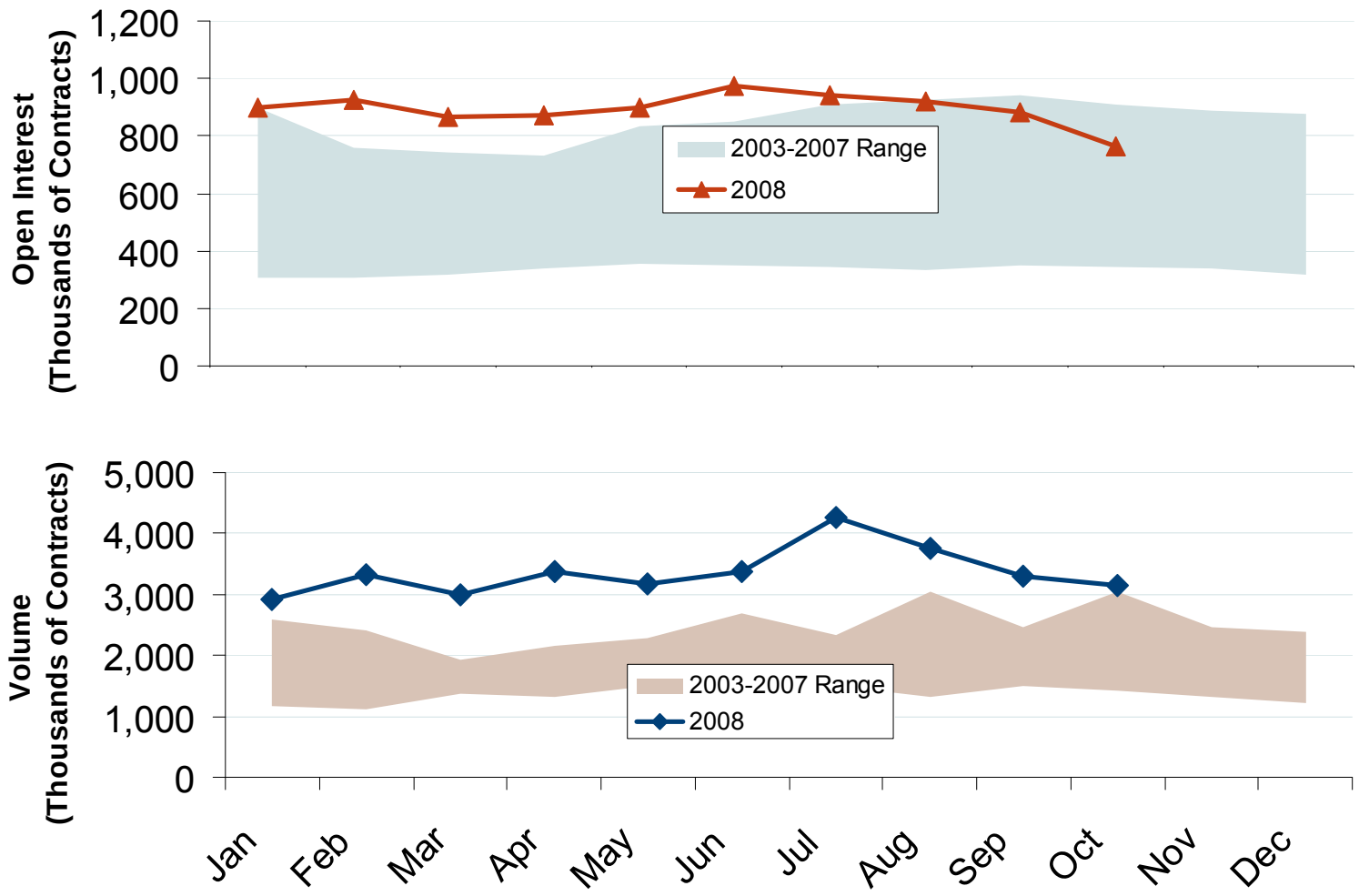
NYMEX Natural Gas Futures
Month-End Open Interest and Total Monthly Volume



Source: Derived from *NYMEX* data.

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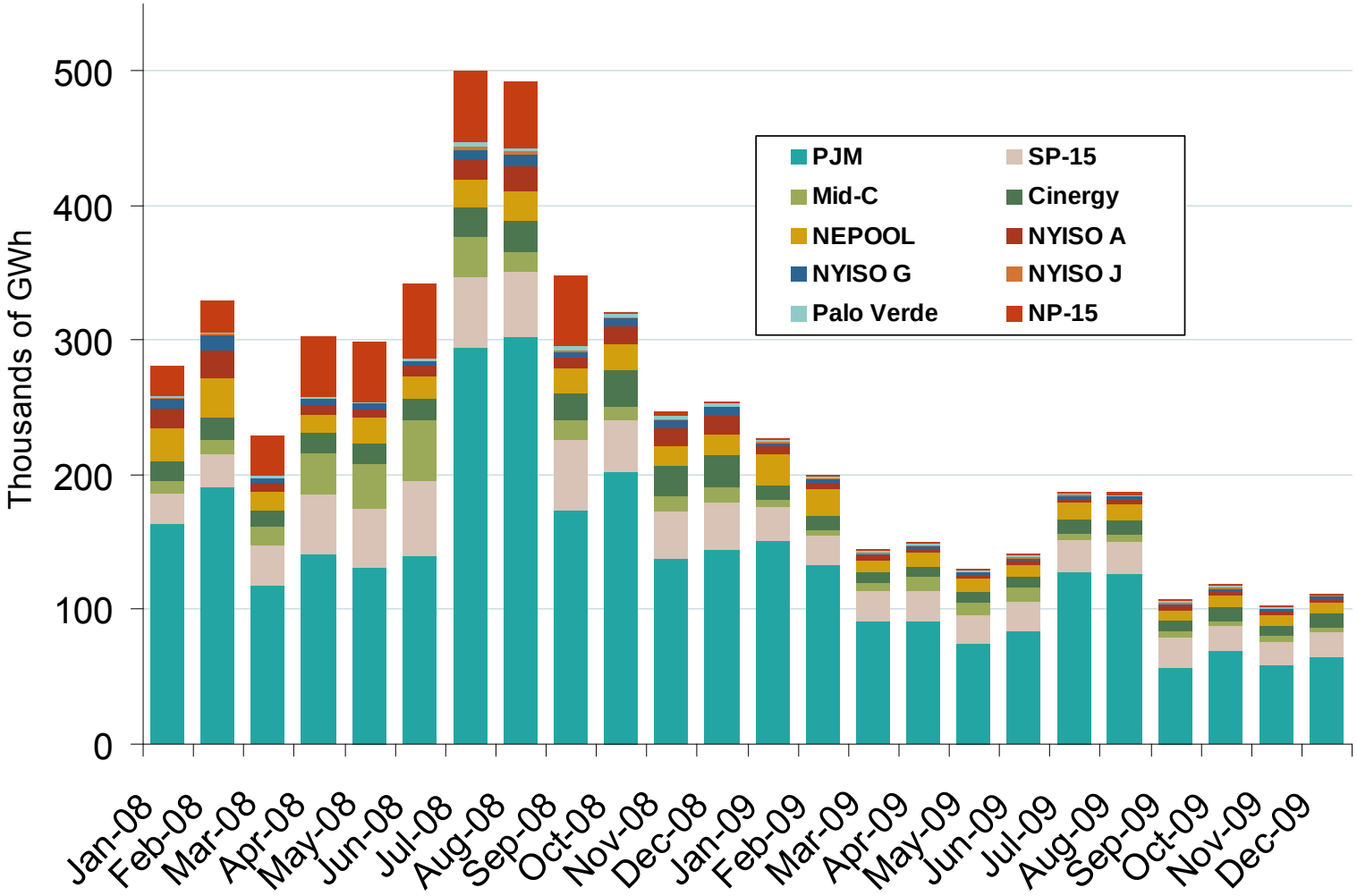
Financial Trading on ICE by Contract Month



Source: Derived from ICE data. ICE on-peak swaps (financial) volume include monthly, dual monthly, quarterly, and calendar year contracts traded for each month.

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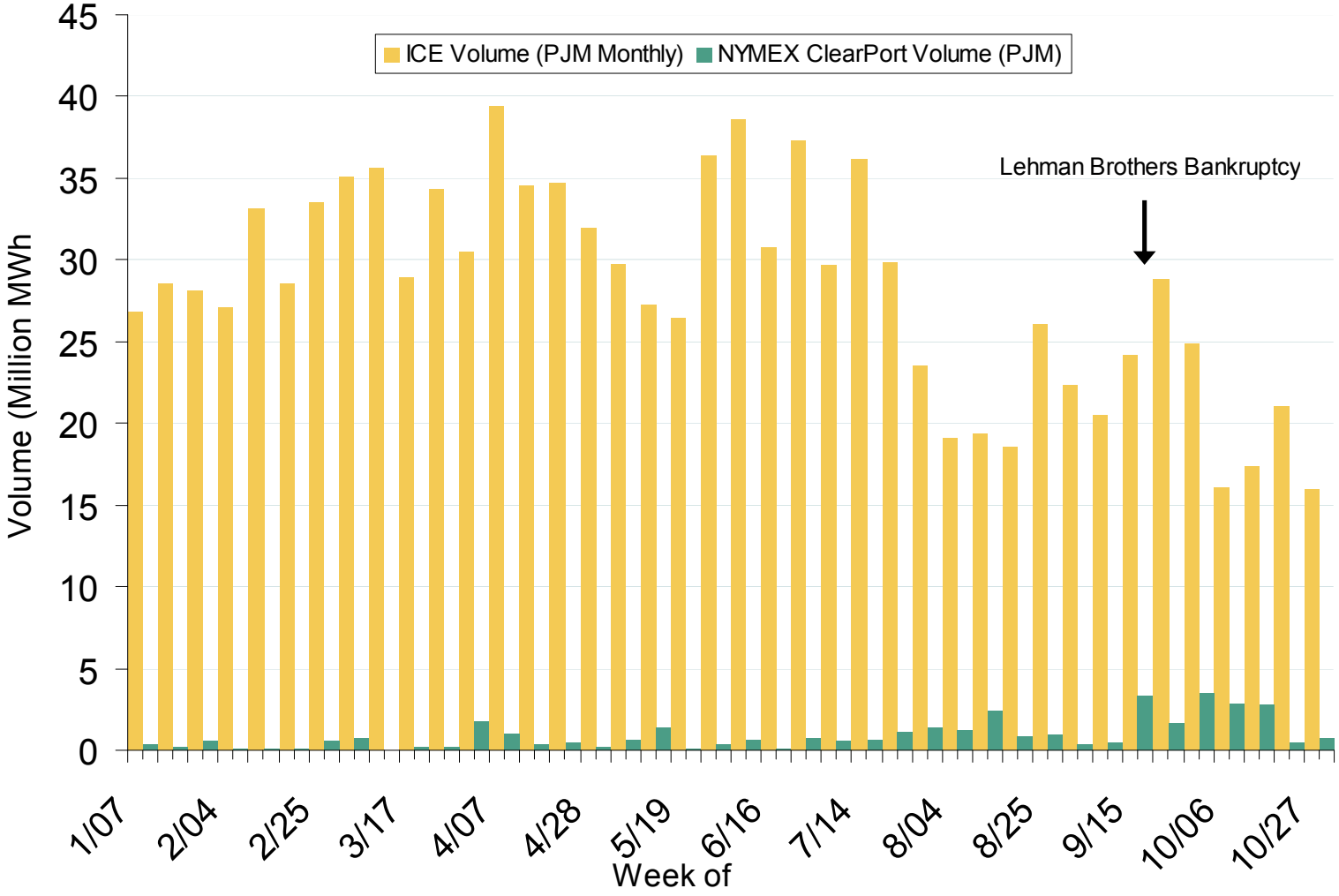
PJM Financial Trading Volumes on ICE and Nymex Monthly Contracts by Trade Week



Source: Derived from ICE and NYMEX ClearPort data. Volumes are Weekly Totals of Month Long Term Products Only, Excluding Holiday Weeks and Off-Peak Hour Deliveries.

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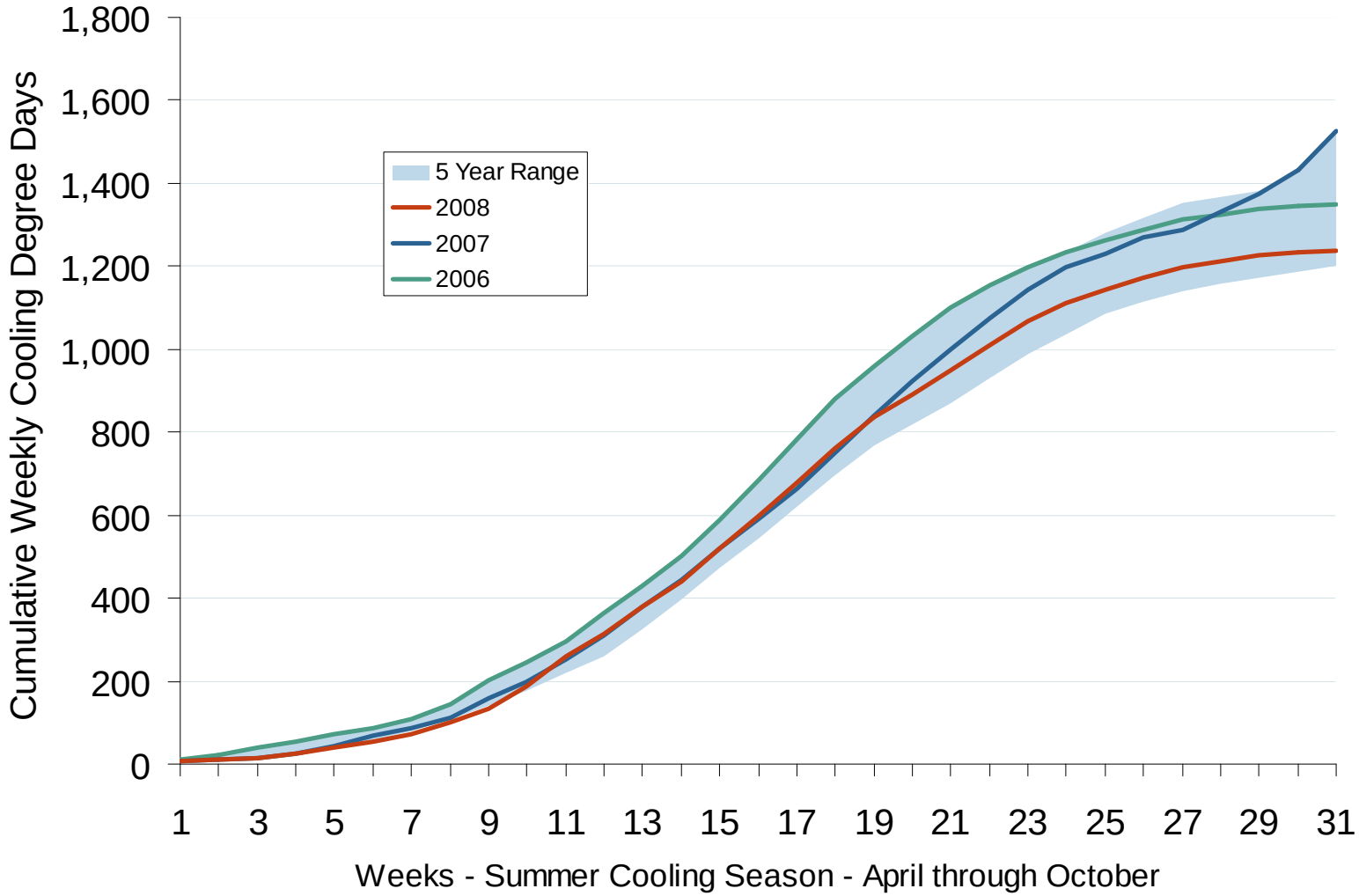
Electricity Markets

U. S. Summer Cumulative Cooling Degree Days



Source: Derived from *NOAA* data.

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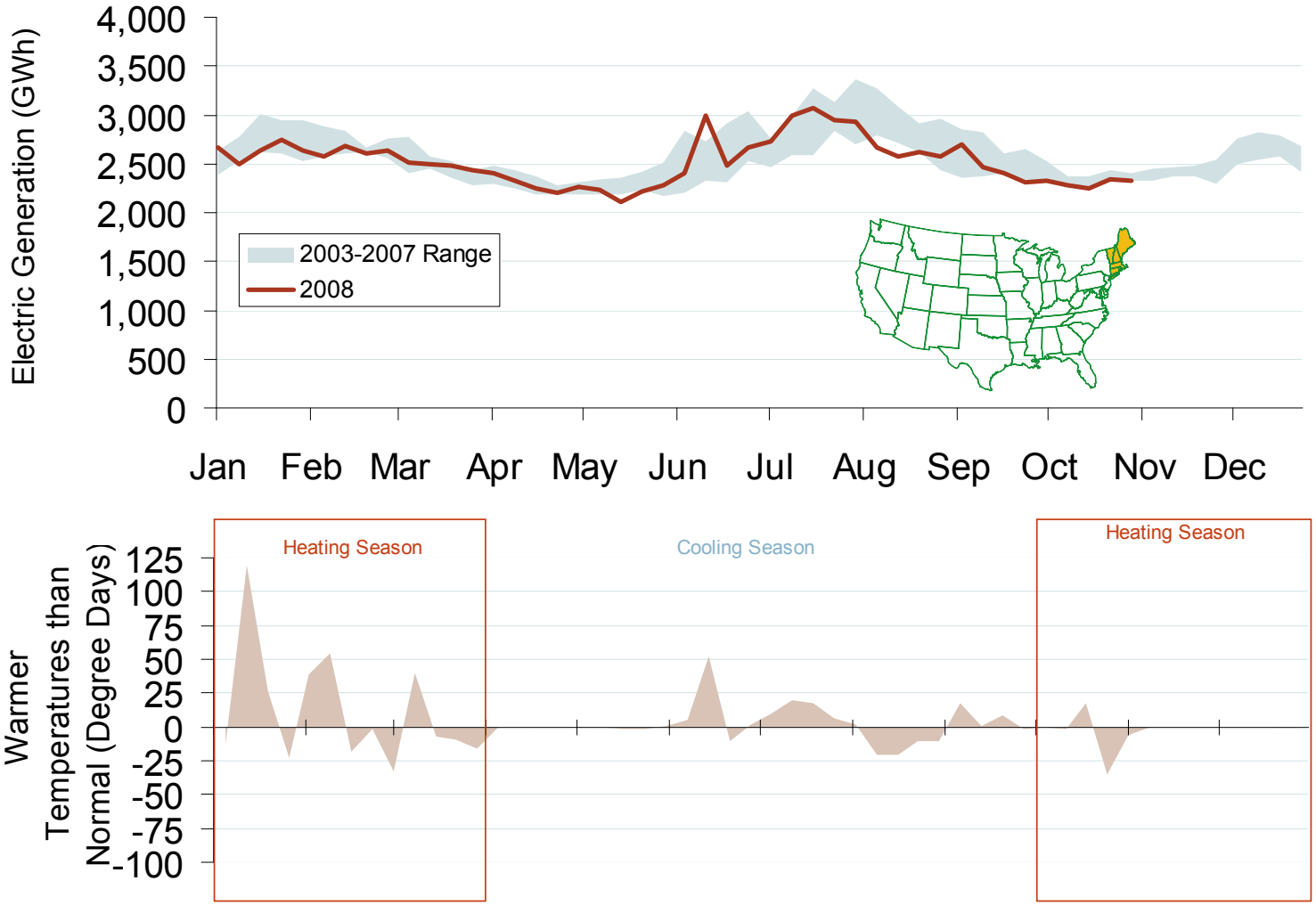
Weekly Electric Generation Output and Temperatures New England



Source: Derived from *EEI* and *NOAA* data.

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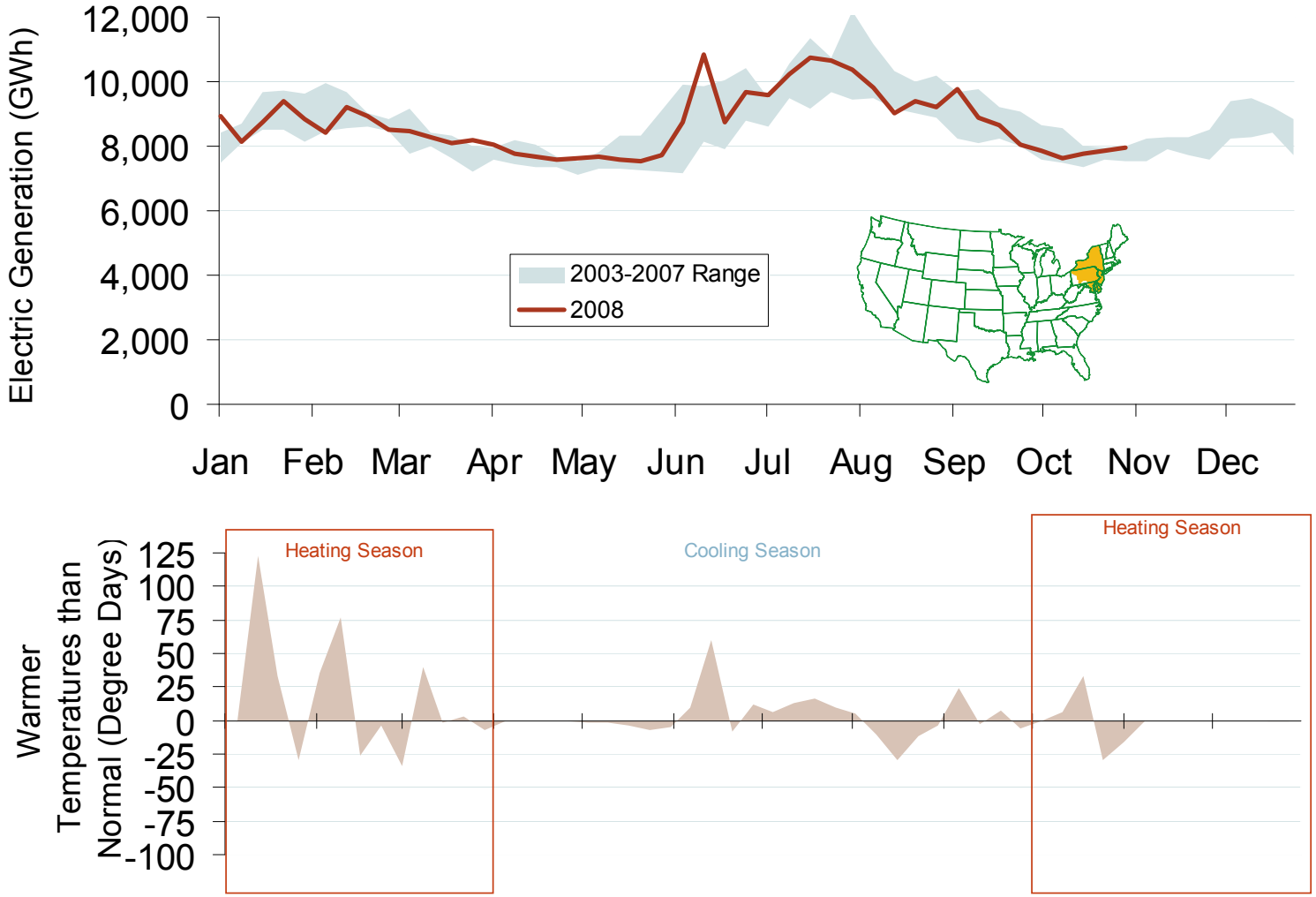
Weekly Electric Generation Output and Temperatures Mid Atlantic Region



Source: Derived from *EEI* and *NOAA* data.

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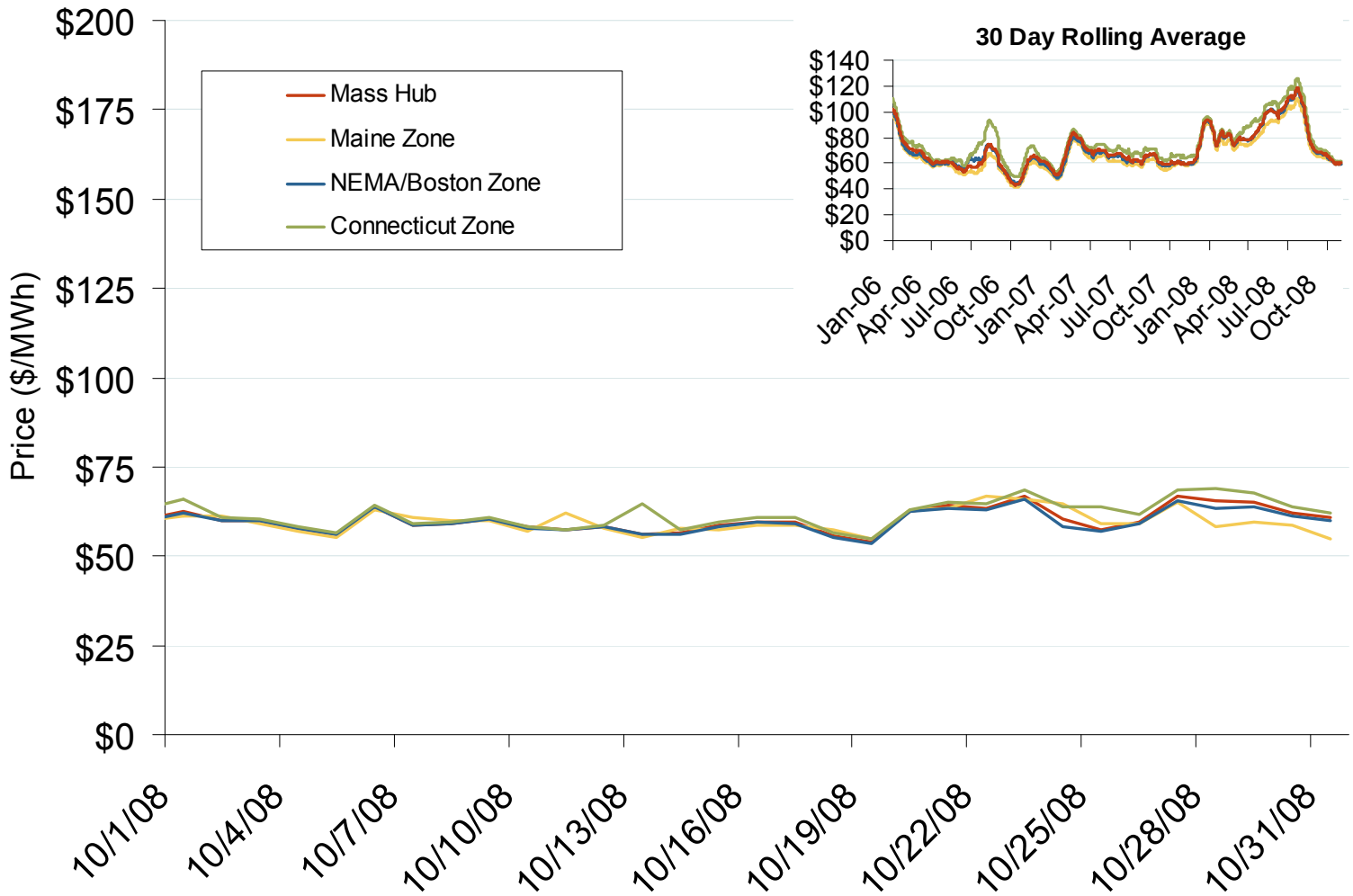
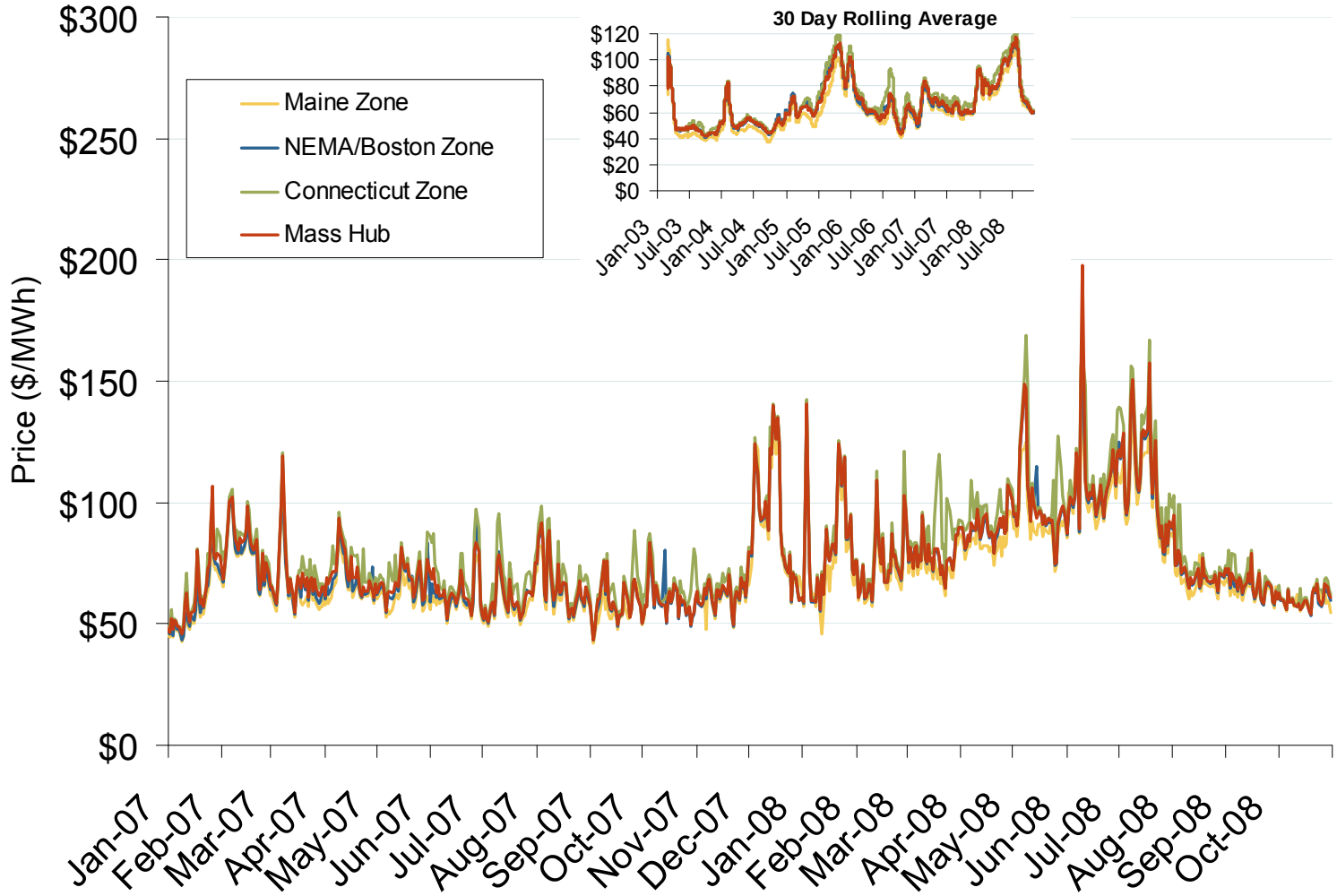
Daily Average of ISO-NE Day-Ahead Prices - All Hours



Source: Derived by *Bloomberg* from *ISO-NE* data as reported by *Bloomberg*.

Updated November 7, 2008

Daily Average of ISO-NE Day-Ahead Prices - All Hours



Source: Derived by *Bloomberg* from *ISO-NE* data as reported by *Bloomberg*.

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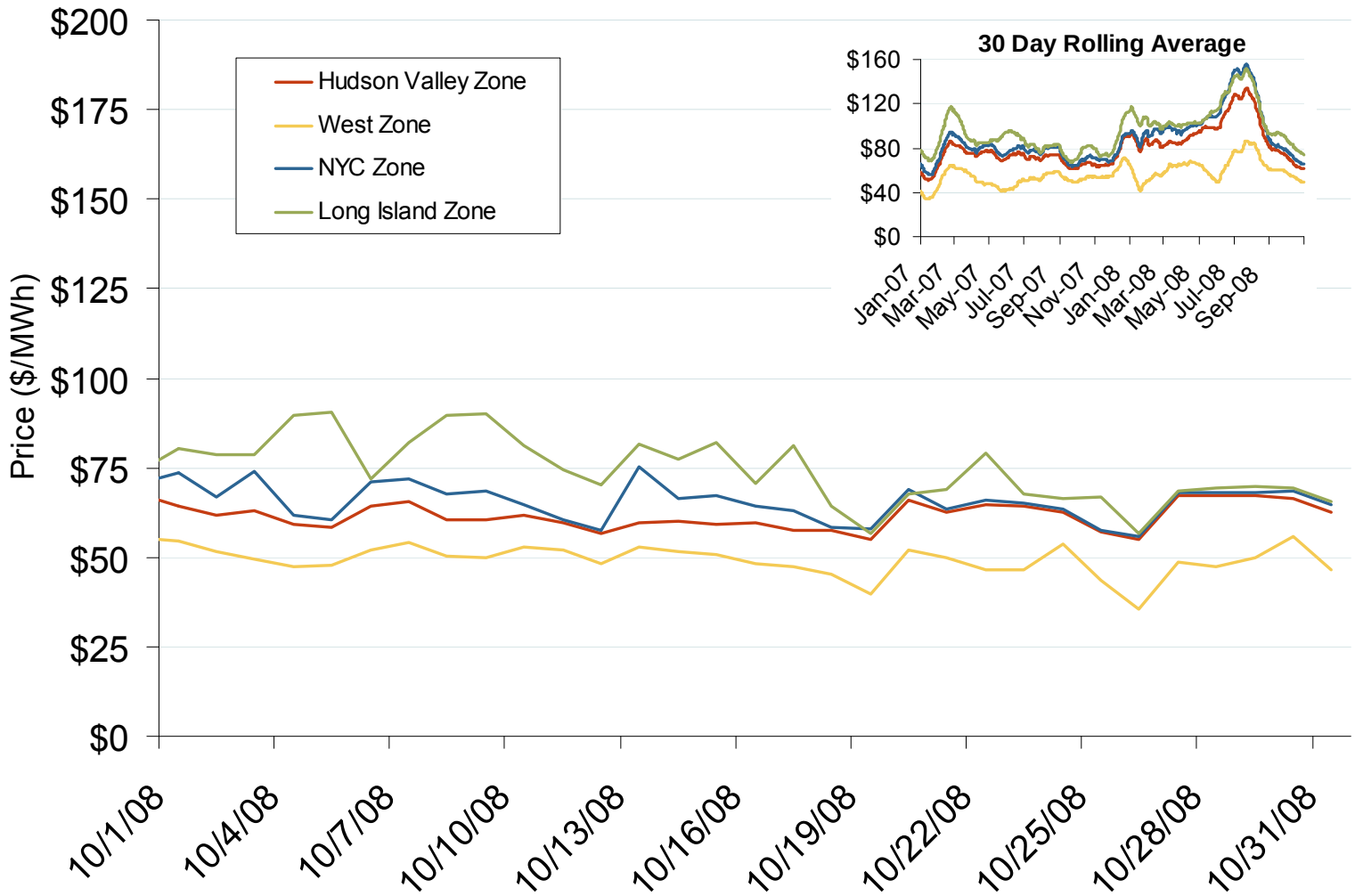
Daily Average of NYISO Day-Ahead Prices - All Hours



Source: Derived by *Bloomberg* from *NYISO* data as reported by *Bloomberg*.

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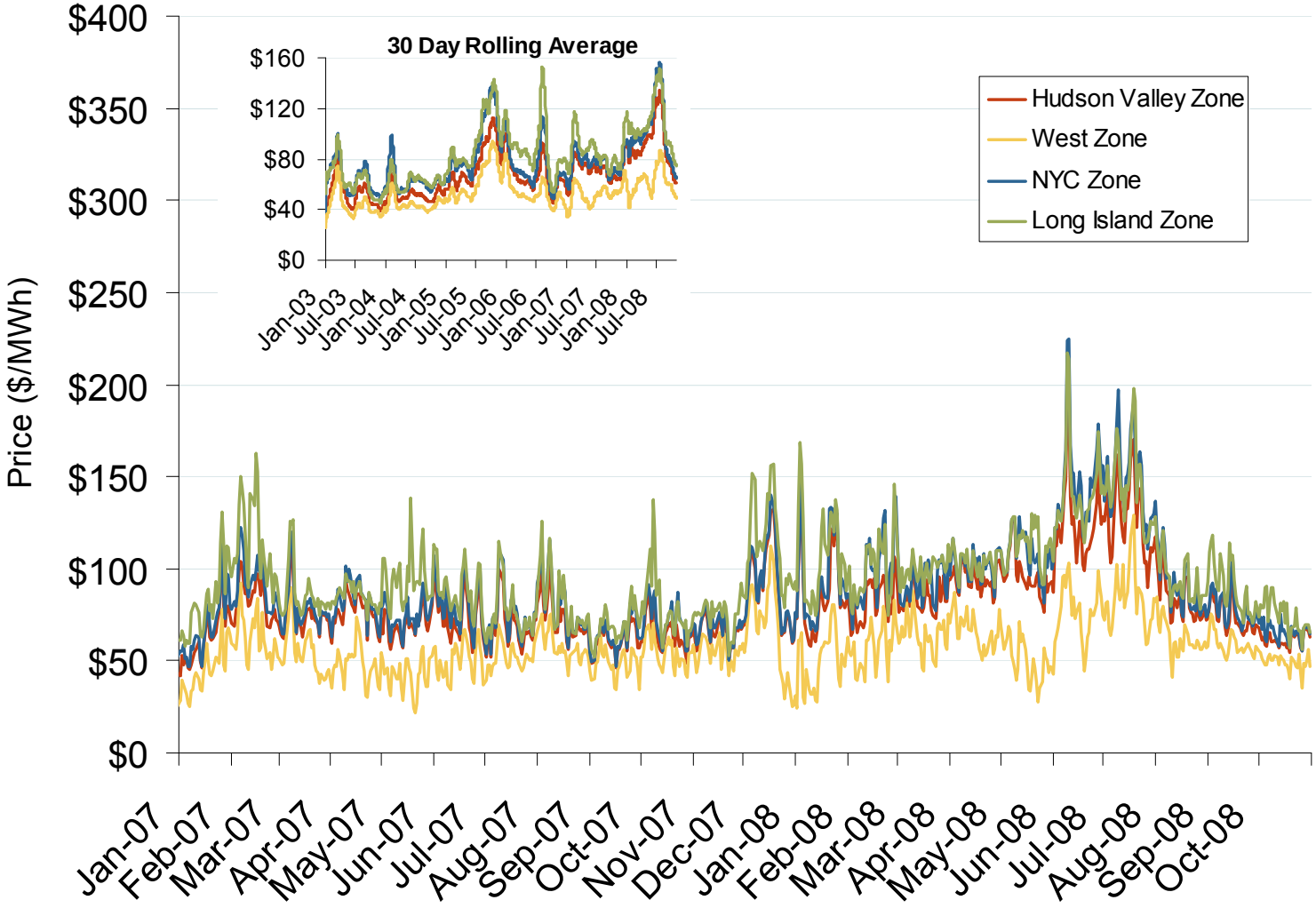
Daily Average of NYISO Day-Ahead Prices - All Hours



Source: Derived by *Bloomberg* from *NYISO* data as reported by *Bloomberg*.

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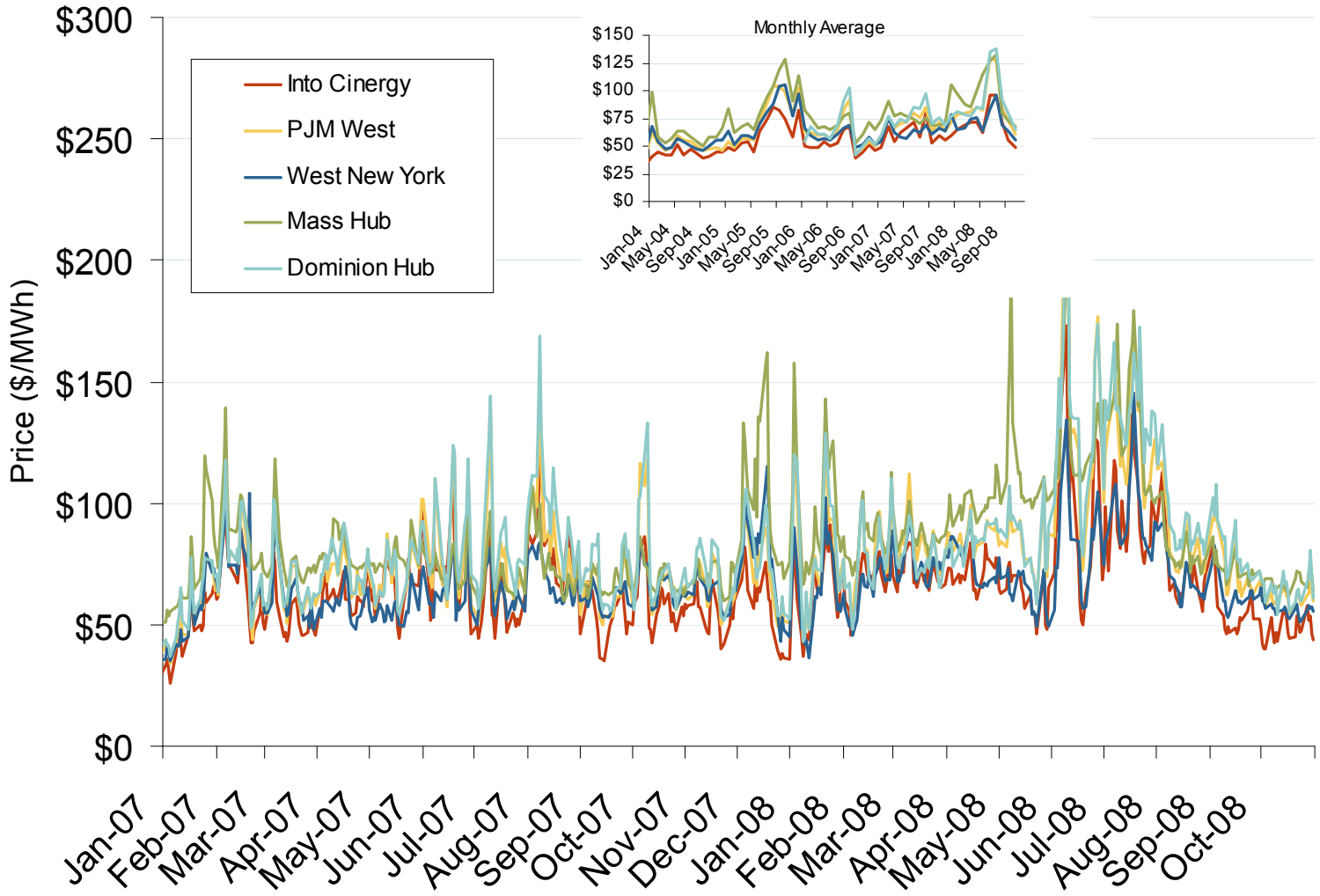
Eastern Daily Bilateral Day-Ahead On-Peak Prices



Source: Derived from *Platts* data.

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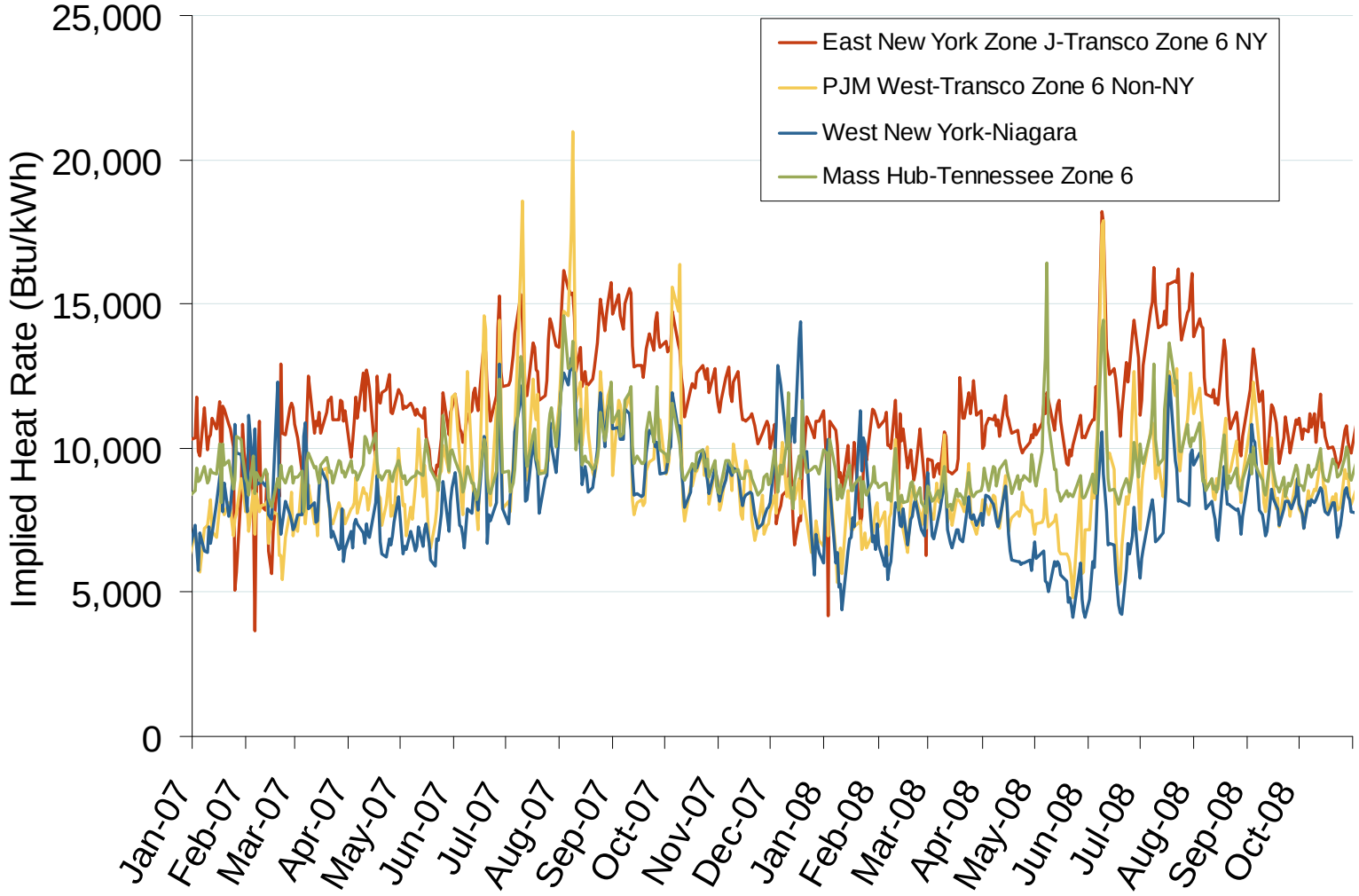
Implied Heat Rates at Eastern Trading Points



Source: Derived from *Platts* data

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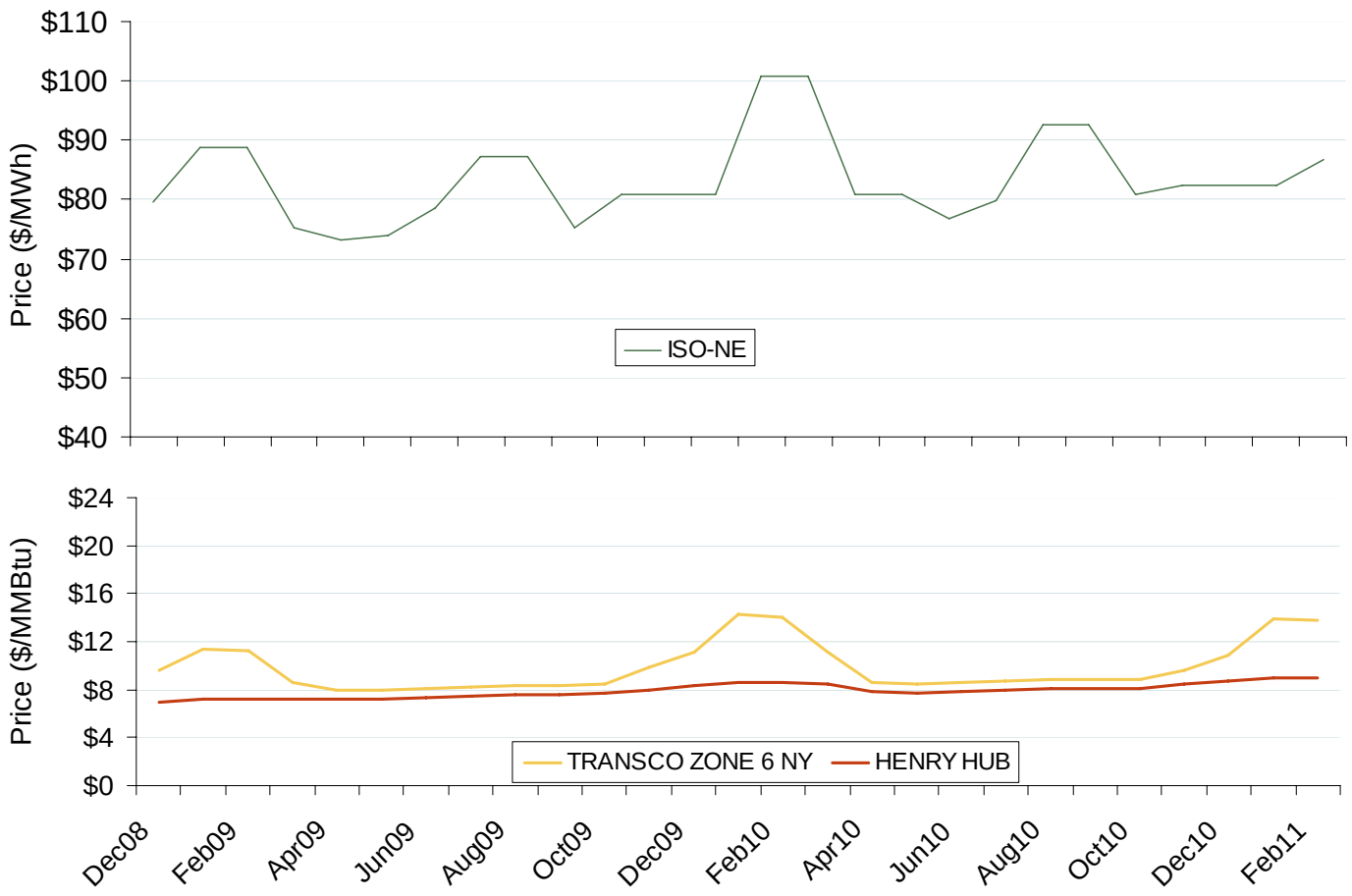
New England Electric Forward Price Curve and New York and Henry Hub Natural Gas Forward Curves



Source: Derived from *Nymex* data.

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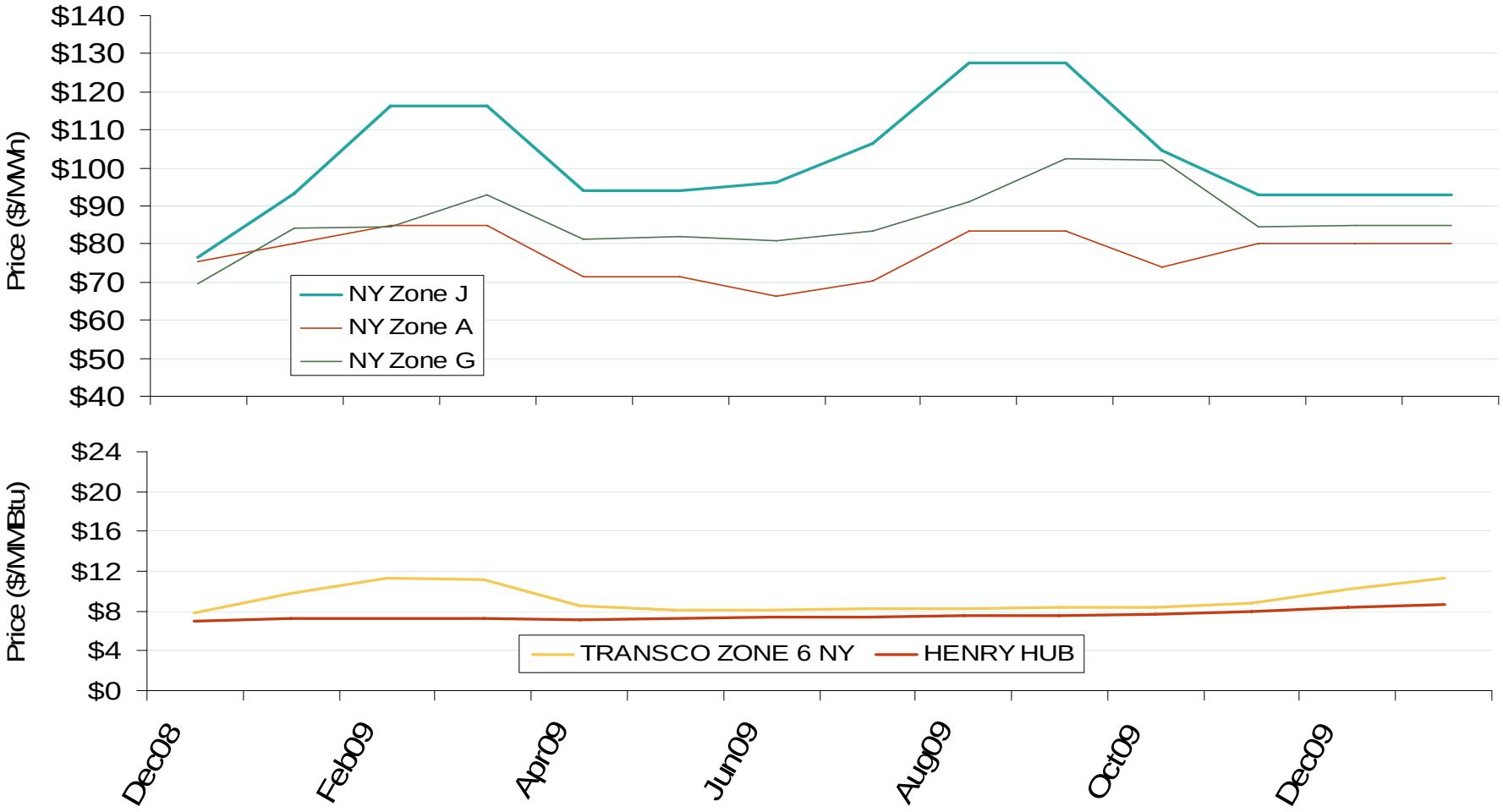
New York Electric Forward Price Curves and New York and Henry Hub Natural Gas Forward Curves



Source: Derived from *Nymex* data.

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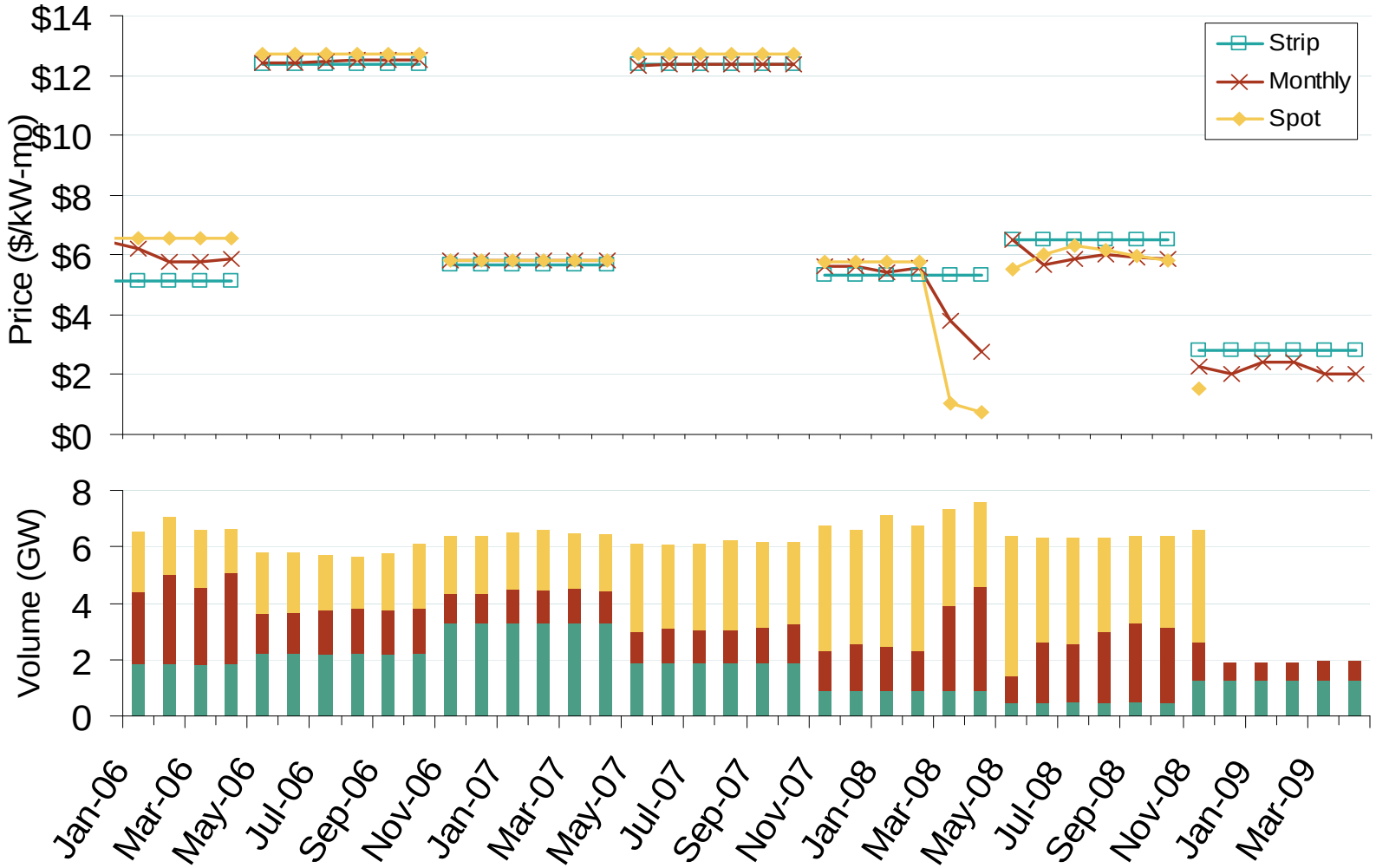
Weighted Average ICAP Clearing Prices and Volumes: New York City



Source: Derived from NYISO data.

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Renewable Energy Portfolio Standards (RPS)

28 states plus D.C. have an RPS

WA: 15% by 2020

OR: 25% by 2025; small utilities 5-10%

ID: Priority to DR, EE, and in-state RE

CA: 20% by 2010; goal of 33% by 2020

NV: 20% by 2015; solar 5% per year

UT: 20% by 2025

CO: 20% by 2020; co-ops & munis 10%; includes 4% solar

AZ: 15% by 2025; includes 30% DG

NM: 20% by 2020; co-ops 10%

TX: 5,880 MW by 2015; goal of 10,000 MW by 2025

HI: 20% by 2020, *and* goal of 70% RE by 2030

MT: 15% by 2015

ND: 10% by 2015

KS: 20% wind by 2020

OK: studying RPS, RE transmission, cost-recovery

MN: 25% by 2025 Xcel 30% by 2020

IA: 1,105 MW by 2011*

MO:15% by 2021; at least 2% solar

AR: utilities to include RE in IRPs

WI: 10% by 2015; proposed for 2009: 25% by 2025

IL: 25% by 2025

MI: 10% by 2015, and new RE capacity: 1,100 MW by 2015

OH: 12.5% by 2025; 0.5% solar

KY: recommended goal

ME: 40% by 2017

NH: 23.8% BY 2025

VT: 25% by 2025

MA: 15% by 2020; 250 MW solar goal by 2017

RI: 16% by 2019

CT: 23% Class I/II by 2020 4% Class III by 2010

NY: 24% by 2013

PA: 8% Tier I, 10% Tier II by 2020; 0.5% solar set-aside

NJ: 22.5% by 2020; 2% solar; MEP proposes increases

DE: 20% by 2019, with 2% solar

DC: 20% by 2020; with 0.4% solar

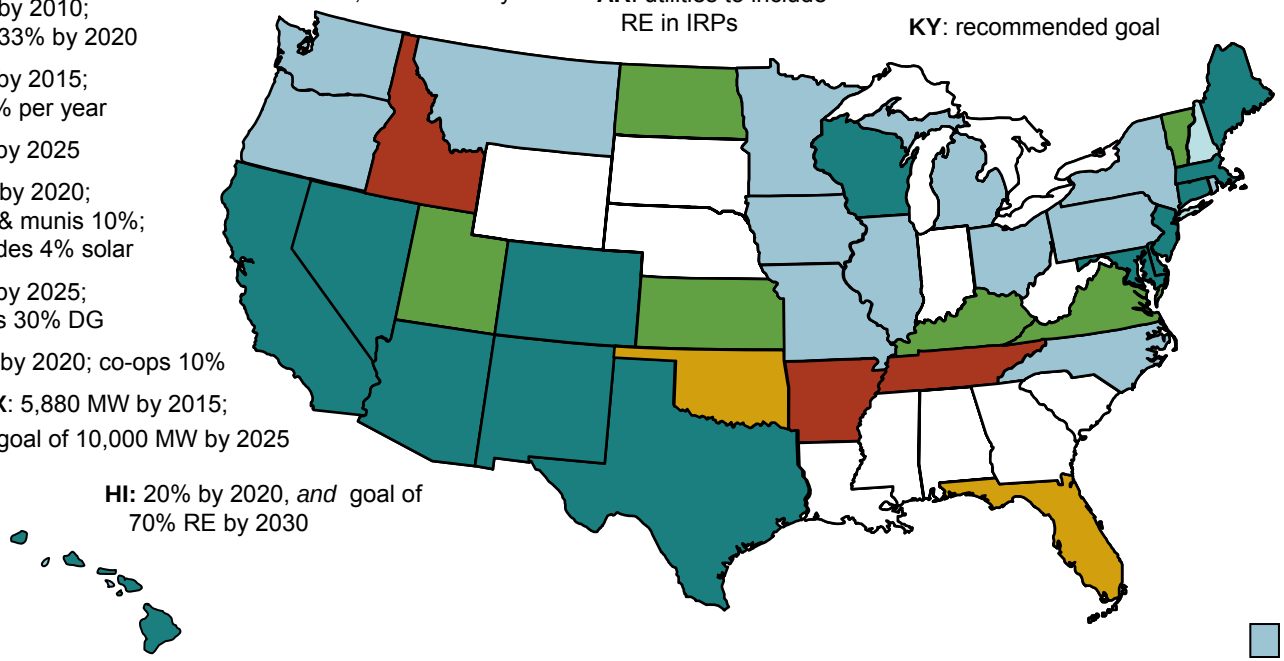
MD: 20% by 2022, with 2% solar

VA: 12% by 2022

TVA: examining renewable and clean energy potential*

NC: 12.5% by 2021 co-ops & munis: 10% by 2018

FL: PSC postponed vote on draft RPS to Jan 2009 for more study



- RPS
- Strengthened/ amended RPS
- Voluntary standards or goals
- Proposed RPS or studying RPS
- Other renewable energy goal

Updates at: http://www.ferc.gov/market-oversight/mkt-electric/overview/elec-ovr-rps.pdf

Notes: Alaska has no RPS; * Iowa has a goal of 1,000 MW of wind by 2010; TVA's "Renewable Energy and Clean Energy Assessment" is from the Public Power Authority; it is not a state policy.
Abbreviations: DG: distributed generation; DR: demand response; EE: energy efficiency; IRP: integrated resource plan.
Sources: Derived from data in: EEI, EIA, LBNL, PUCs, State legislative tracking services, Database of State Incentives for Renewables and Efficiency, and the Union of Concerned Scientists.

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Energy Efficiency Resource Standards (EERS)

ID: Energy Plan puts conservation – DR and EE – as priority resource

MT: state agency reduction initiative: save 20% by 2010

MN: reduce fossil fuel use 15% by 2015 through EE, RE

IA: utilities must establish EE goals by end of 2008

WI: RPS requires utility EE

MI: annual incremental savings: 1% of prior year's sales by 2012

IL: reduce energy 2% by 2015 (EE) and 0.1% from prior year (DR)

OH: reduce peak-demand 8% by '18; 22% energy savings by '25

ME: 10% new EE by 2017; in RPS goal as 2nd priority

VT: EE & RE to meet 2007-12 growth

MA: meet 25% of capacity and energy with DSR by 2020

NY: 15% electric use reduction by 2015; doubles EE funding

CT: 4% savings by 2010; a Tier III RPS resource

NJ: reduce consumption 20%, and peak demand 5,700 MW by 2020

DE: EE, RE, DG, and DR are priority resources before new gen

PA: reduce energy consumption 3% and peak demand 4.5% by 2013

DC: reduce peak demand and energy consumption

MD: reduce peak demand and per cap electricity use 15% by 2015

VA: reduce 10% of 2006 sales by 2022 with EE, DR

NC: EE to meet up to 25% of RPS to 2011; later to 40%

TVA: reduce peak demand 1,400 MW by 2012 with EE, DR *

FL: PSC to adopt goals to reduce electric consumption, peak demand

WA: must pursue all cost-effective conservation

OR: IOUs required to have EE in IRP & assess cost-effectiveness

CA: IOUs reduce MW 10%, peak demand (MWh) 12% by 2013; munis 10% by 2017

NV: use EE for up to 25% of RPS by 2015

UT: EE incentives in RPS goal

CO: save 40 MW and 100 GWh annually to 2013

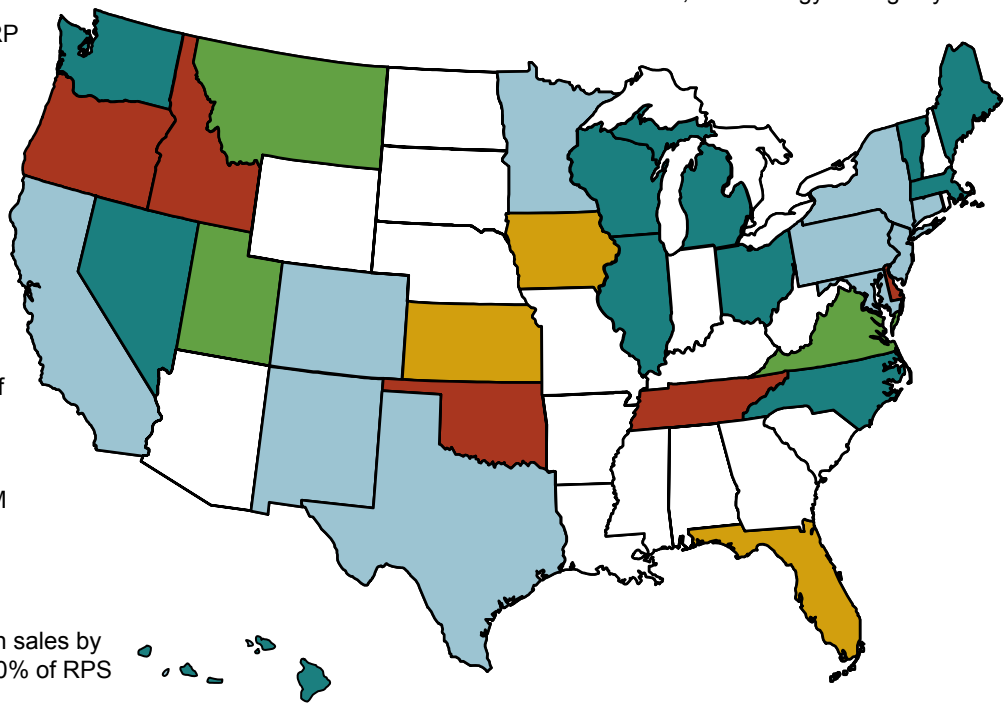
NM: use EE and DR to save 10% of 2005 retail electric sales by 2020

KS: studying for E&G utilities

OK: PSC approved quick-start DSM programs, including EE

TX: 10% of load growth, beyond 2004, based on prior 5 years

HI: 20% of MWh sales by 2020; up to 50% of RPS



- EERS by regulation or law (stand-alone)
- Energy efficiency part of an RPS law, rule, or goal
- Voluntary standards (in or out of RPS)
- Energy efficiency goal proposed / being studied
- Other energy efficiency or demand-side rule or goal

Updates at: http://www.ferc.gov/market-oversight/mkt-electric/overview/elec-ovr-eeps.pdf

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* TVA's "EE and DR Plan" is from the Public Power Authority, and is not a state policy.
Abbreviations: CHP – Combined heat & power; DG – distributed generation; DR - demand response; DSM - demand side management; DSR – demand-side resources; EE - energy efficiency; E&G: electric and gas utilities; IRP – integrated resource plan; RPS: Renewable Portfolio Standard
Sources: ACEEE, EPA, Regulatory Assistance Project, Union of Concerned Scientists, State regulatory and legislative sites, trade press

November 2008 Northeast Snapshot Report

Collaborative Greenhouse Gas (GHG) Programs

Collaborative Regional GHG Programs:

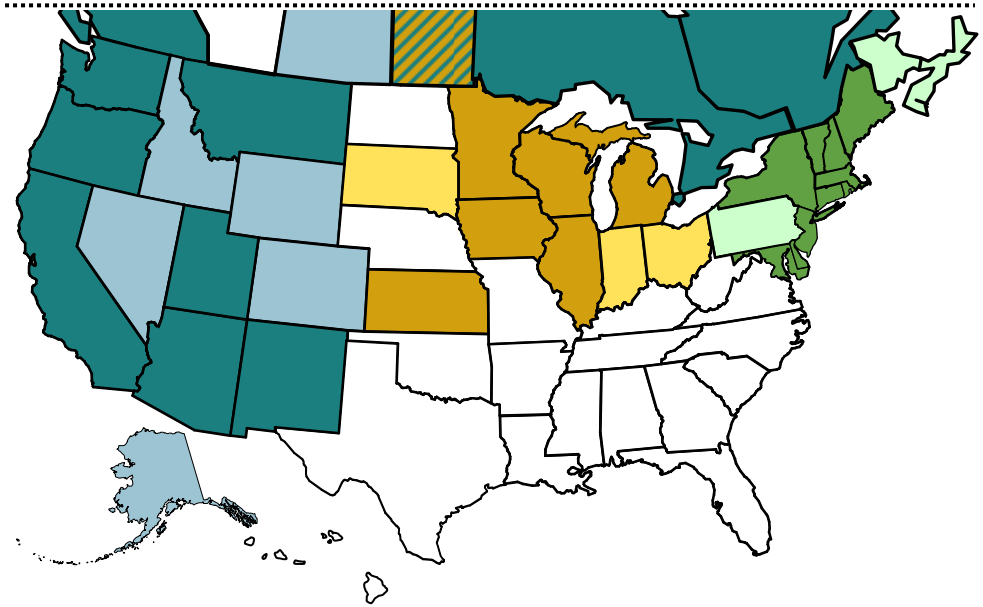
- Three North American groups with goals to lower regional GHG emissions were initiated by state Governors.
- 32 U.S. states, D.C., eight Canadian provinces, and six Mexican states are Participants or Observers.
- Observer jurisdictions do not commit to group GHG reduction goals, but participate in proceedings should they opt to join later.

Western Climate Initiative (WCI):

- Created February 2007
- Partners: 7 states, 4 provinces; Observers: 5 states, 1 province*
- WCI announced its design for a market-based, *multi-sector* cap-and-trade program, Sept 2008:
  - 15% CO_2 reduction below 2005 levels by 2020
  - Phase I to take effect Jan 2012

Midwest Greenhouse Gas Reduction Accord:

- Established November 2007
- Participants: 6 states, 1 province; 3 Observer states, 1 province
- *Preliminary* GHG policy recommendation: 15 – 25% reductions by 2020, 60 – 80% by 2050



Regional Greenhouse Gas Initiative (RGGI):

- Takes effect Jan 2009
- 10 Participant states; Observers: 1 state, D.C., 3 provinces.
- Market-based cap-and-trade effort to reduce *power-sector* CO_2 emissions.
- 10% CO_2 reduction by 2018 covers over 200 plants
- 188 million allowances to be sold in 6 auctions

Auctions:

1. **9/25/08:** 12.5 million allowances cleared at $3.07/allowance, raising $38.5 million.
   - 6 states participated: CT, MA, ME, MD, RI, VT; these 6 will offer 1/6 of allowances at next 5 auctions
2. **12/17/08**: first 6 states plus NY, NJ, NH, DE to participate
   - 31.5 million allowances

3 to 6: All ten states on same percent basis as prior auctions.

- 2009 dates: 3/18, 6/17, 9/16, 12/16

- Participant in WCI
- Observer to WCI
- Participant in MGGRA
- Observer to MGGRA
- Participant in RGGI
- Observer to RGGI
- Participant in MGGRA & WCI

Updates at: http://www.ferc.gov/market-oversight/mkt-electric/overview/elec-ovr-ghg.pdf

Notes: Kansas is a MGGRA participant and WCI observer. Ontario is a Partner to WCI and MGGRA Observer.
Sources: Regional initiatives: www.rggi.org, www.midwesternaccord.org, www.westernclimateinitiative.org , trade press, Pew Center.

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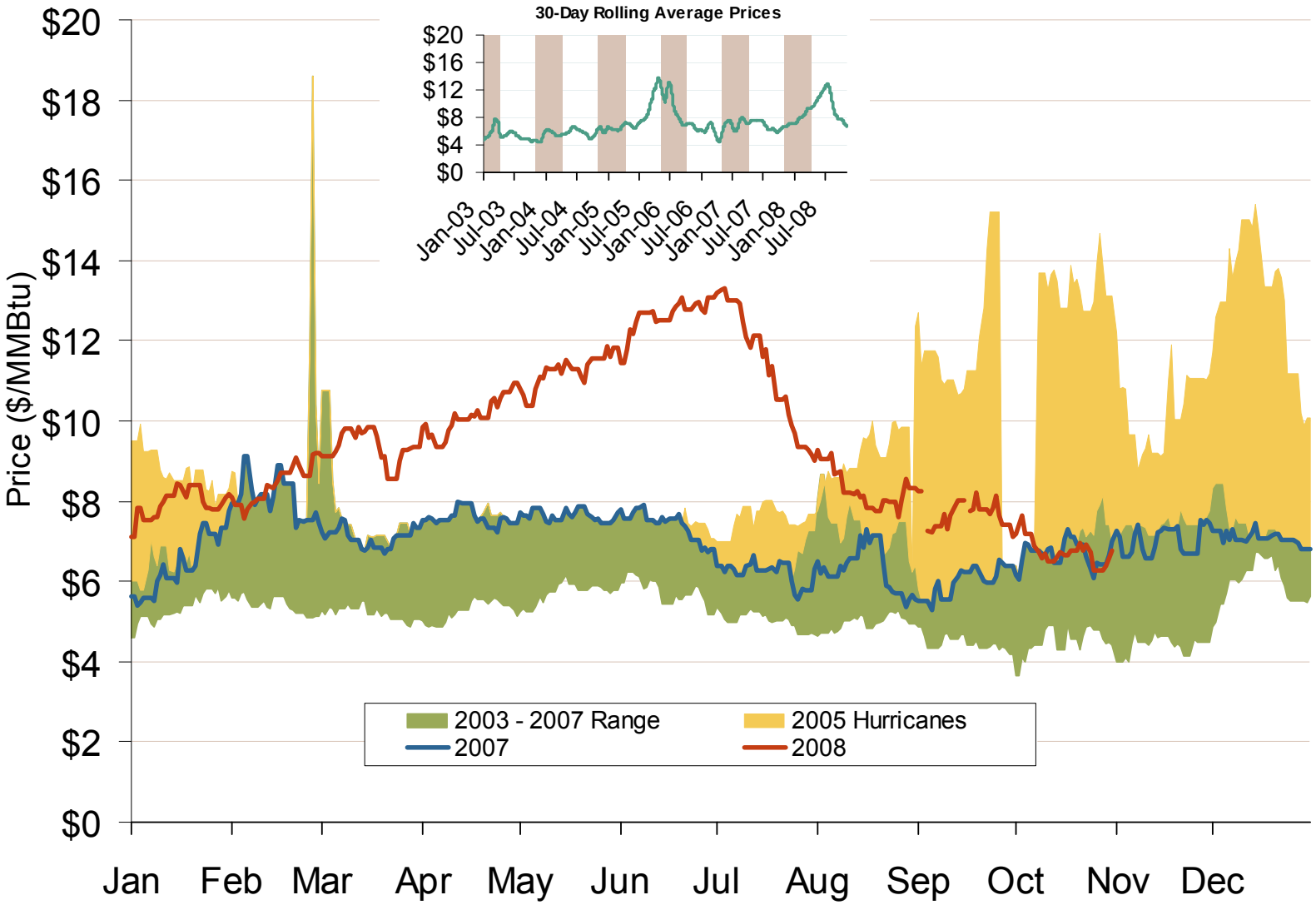
Natural Gas and Fuel Markets

Natural Gas Market Overview: 5 Year Range of Henry Hub Spot Prices

Federal Energy Regulatory Commission • Market Oversight @ FERC.gov

Henry Hub Natural Gas Daily Spot Prices
2007, 2008 and 2003-2007 Year Range



Source: Derived from *Platts* data.

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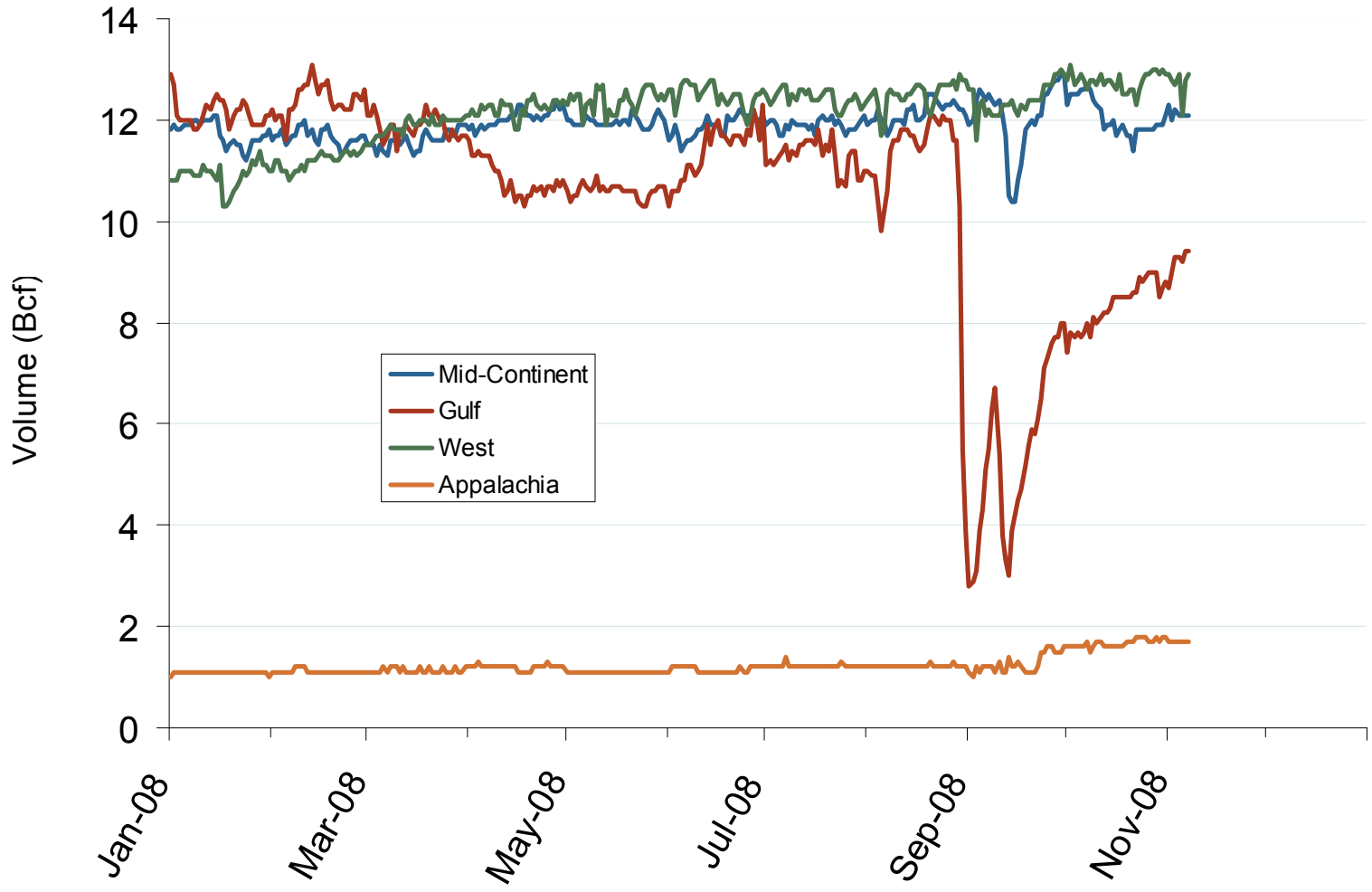
Regional Natural Gas Production for 2008



Source: Derived from *Bentek* data.

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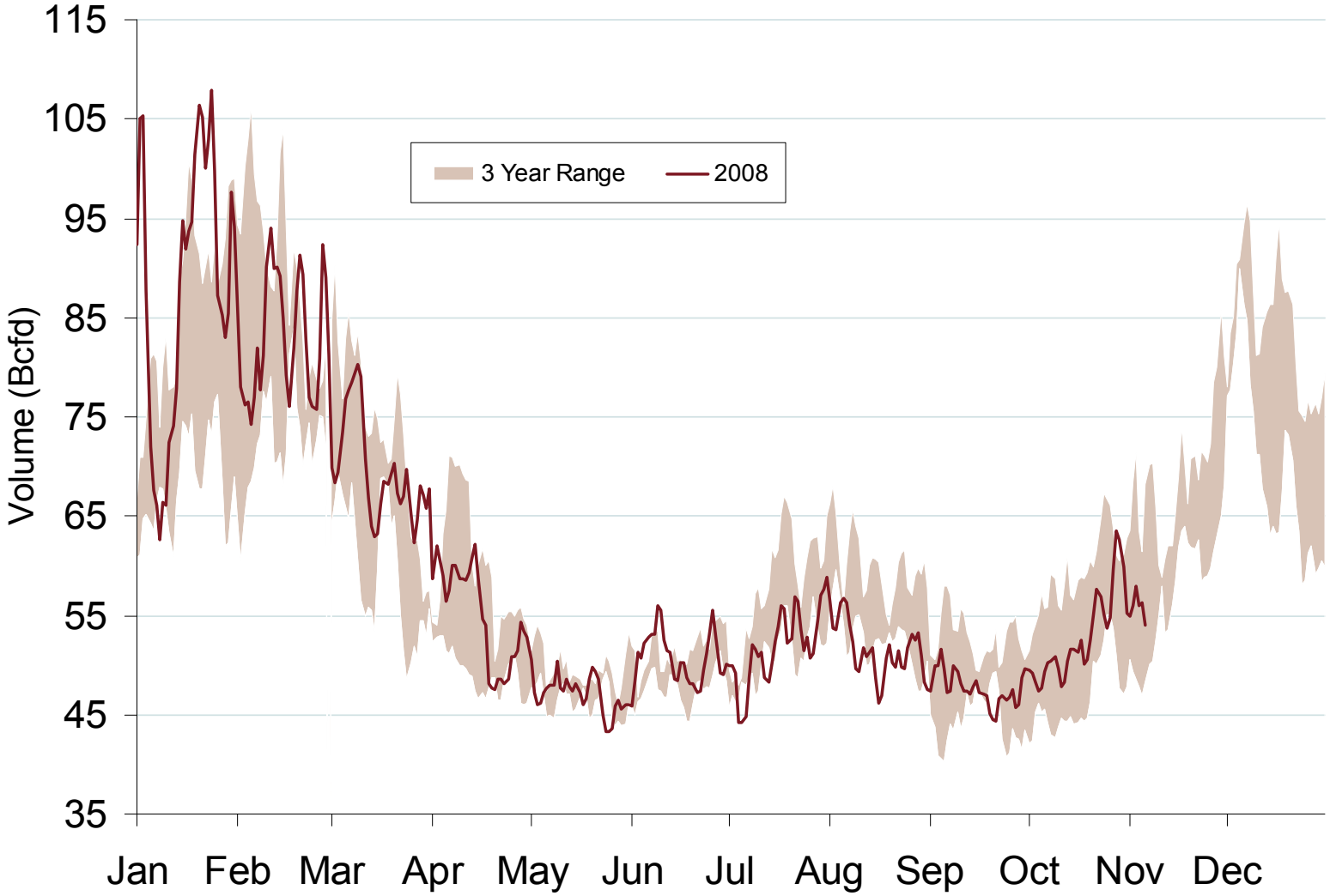
Total U.S. Natural Gas Demand (All Sectors)



Source: Derived from *Bentek Energy* data.

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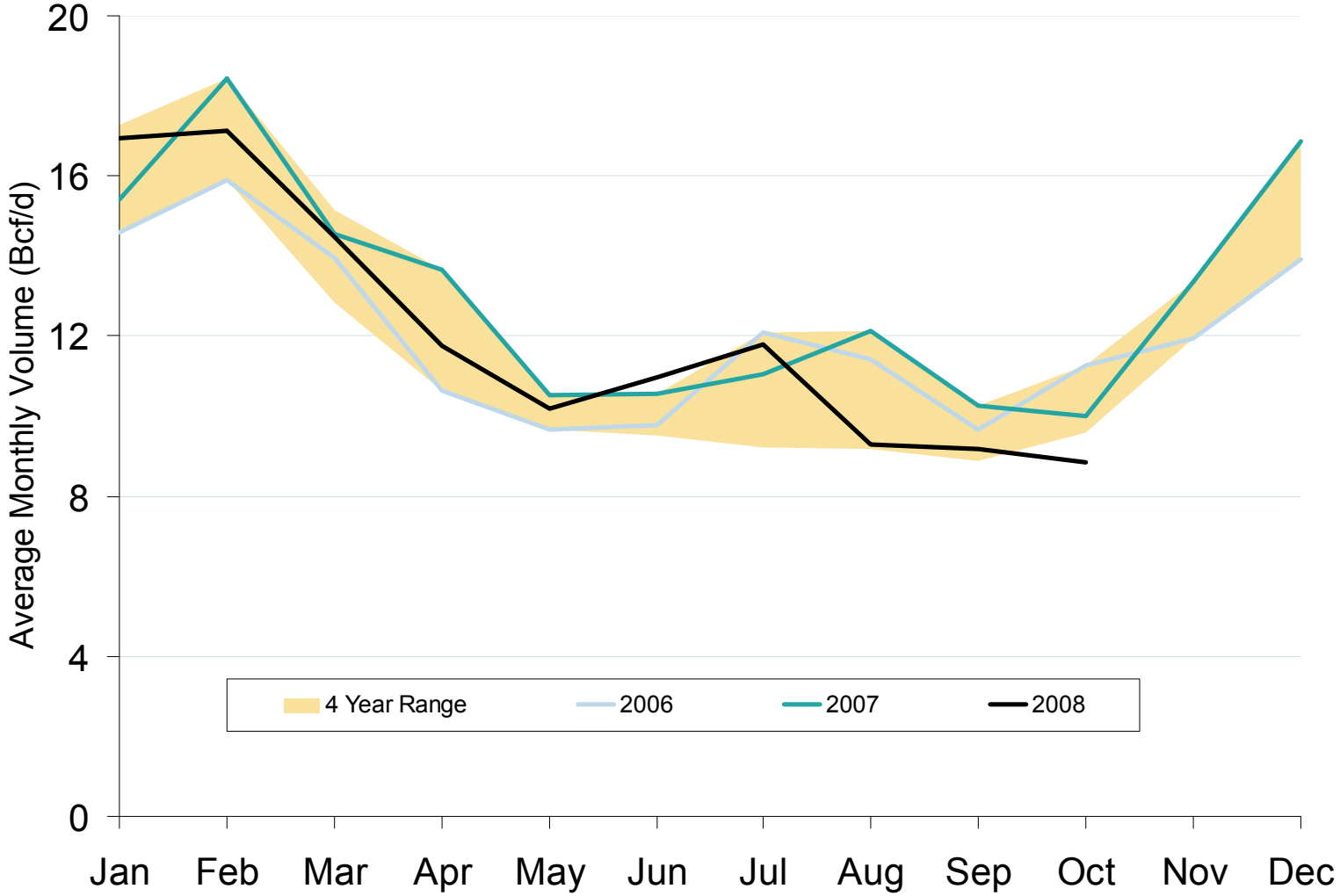
Average Daily Northeast NG Demand, All Sectors



Source: Derived from *Bentek* data.

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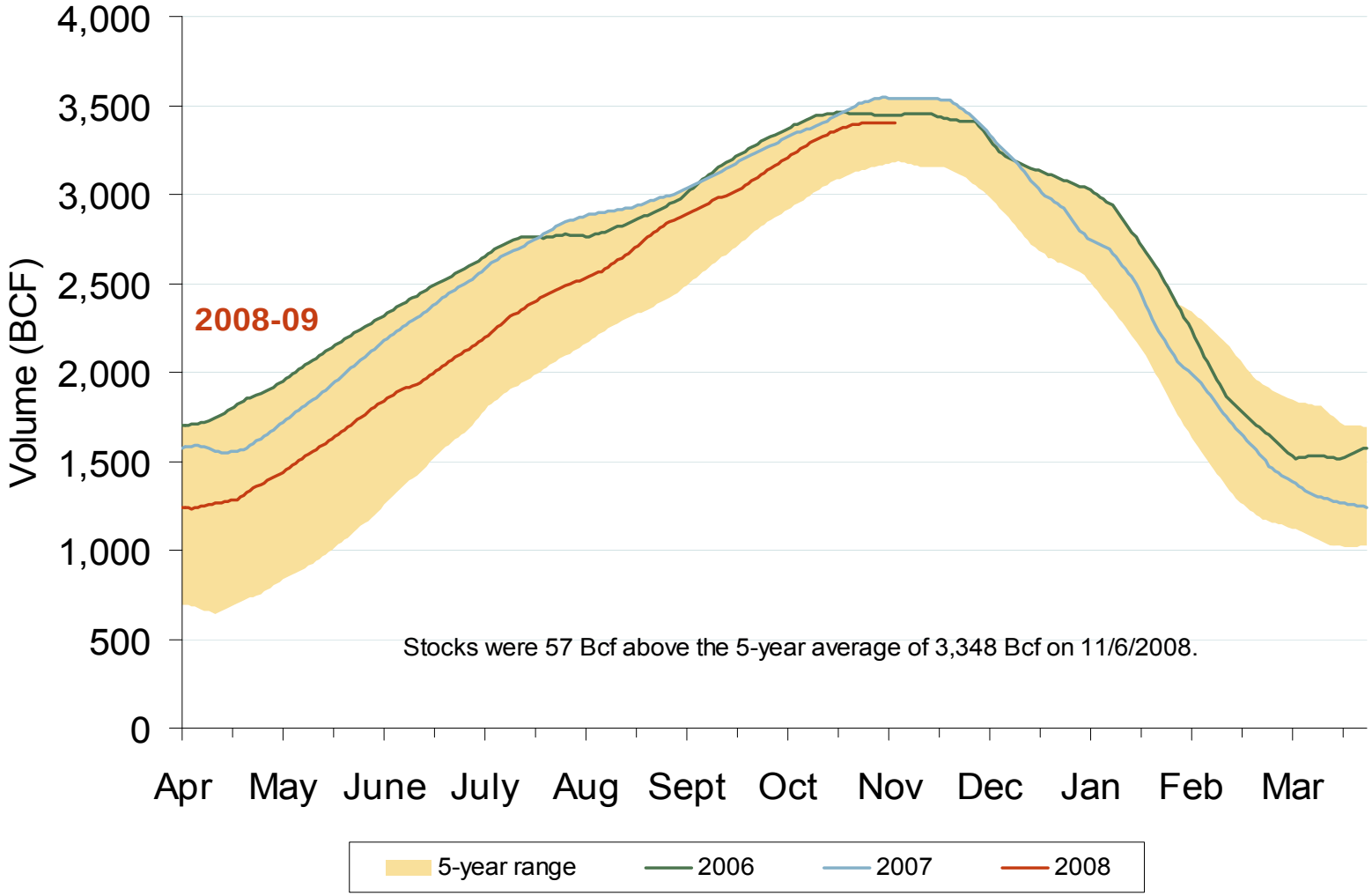
Total U.S. Working Gas in Storage



Source: Derived from *EIA* data.

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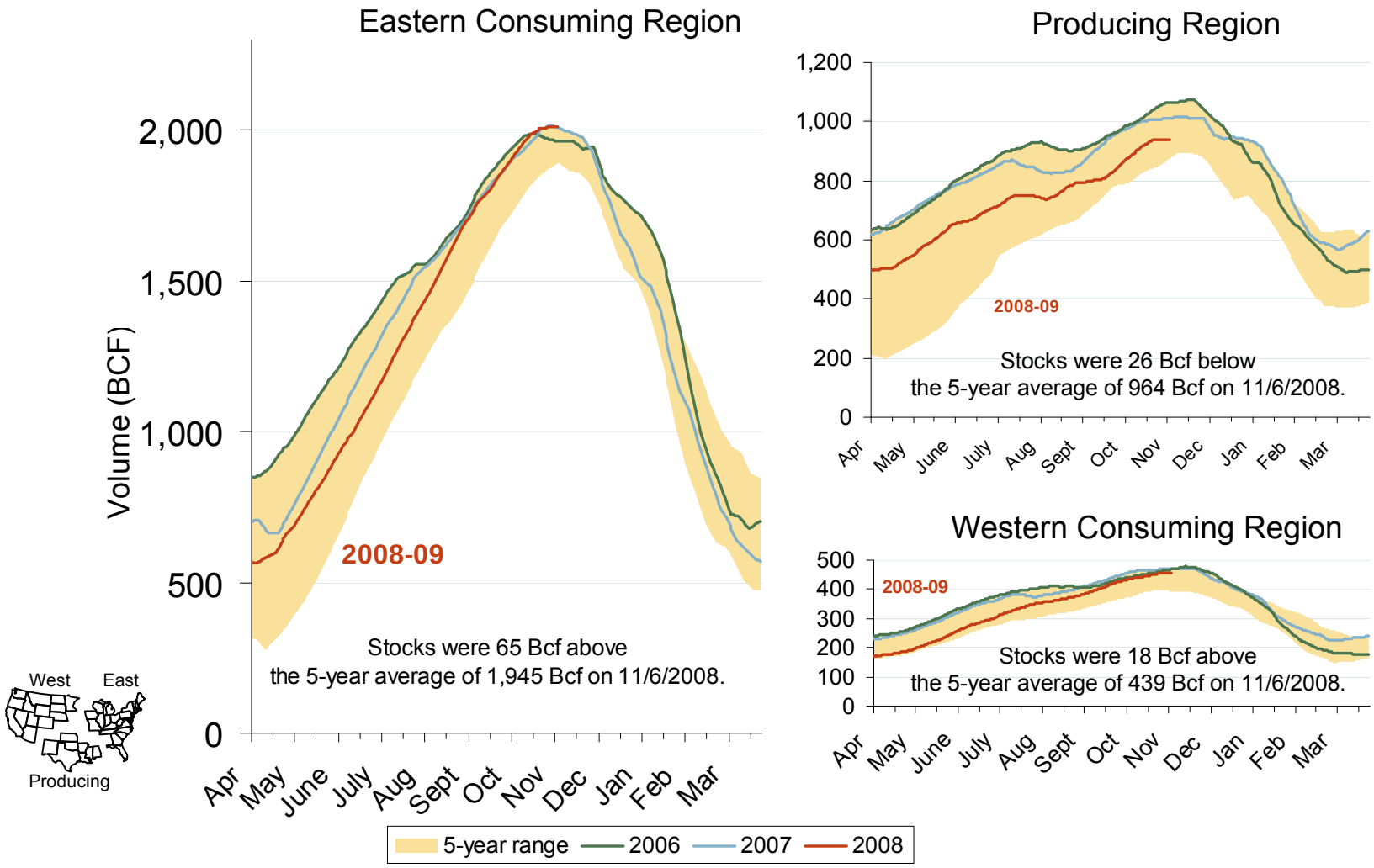
Regional Totals of Working Gas in Storage



Source: Derived from *EIA* data.

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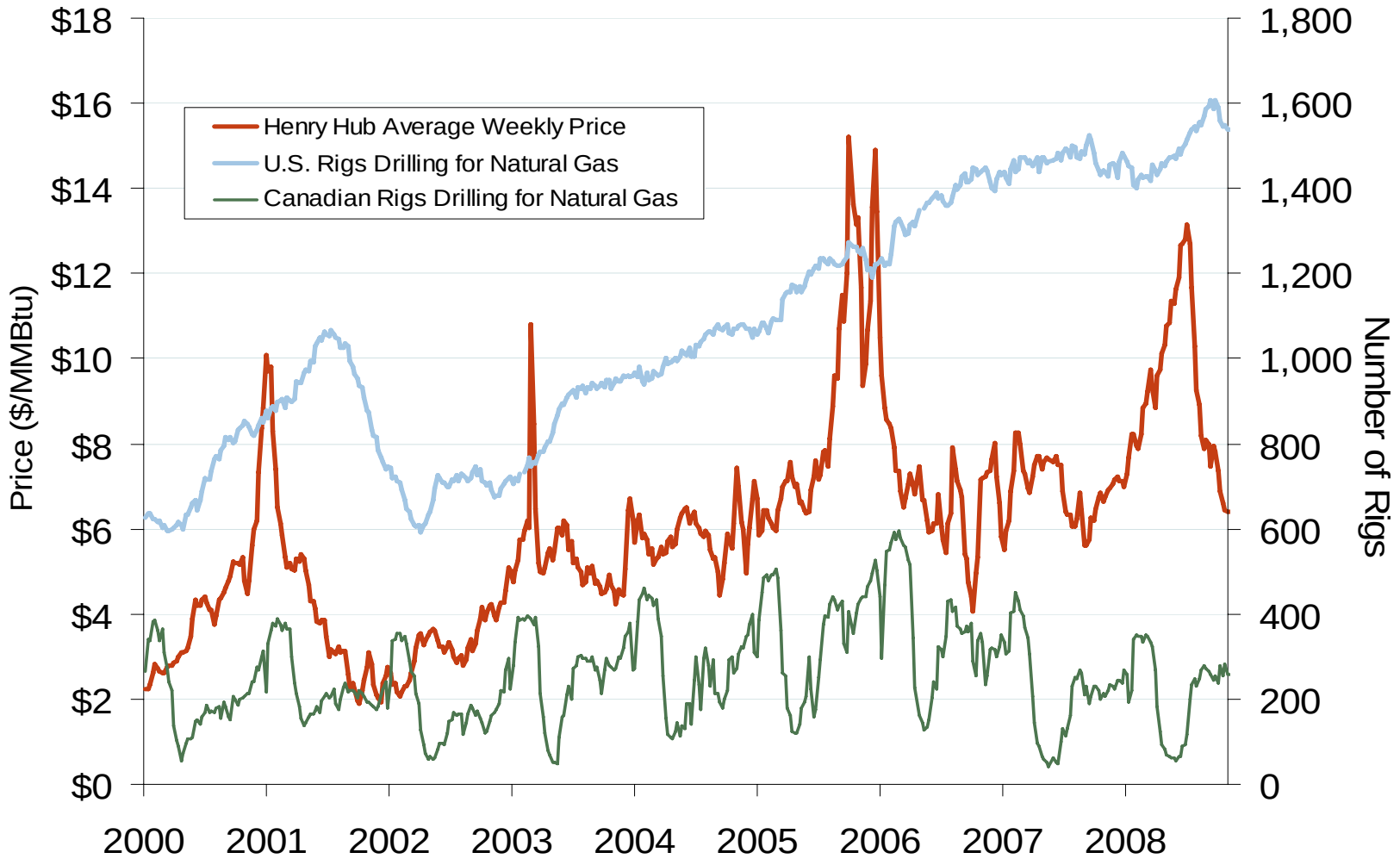
U.S. and Canadian Natural Gas Drilling Rig Count and Daily Spot Prices



Source: Derived from *Platts* and *Baker Hughes* data.

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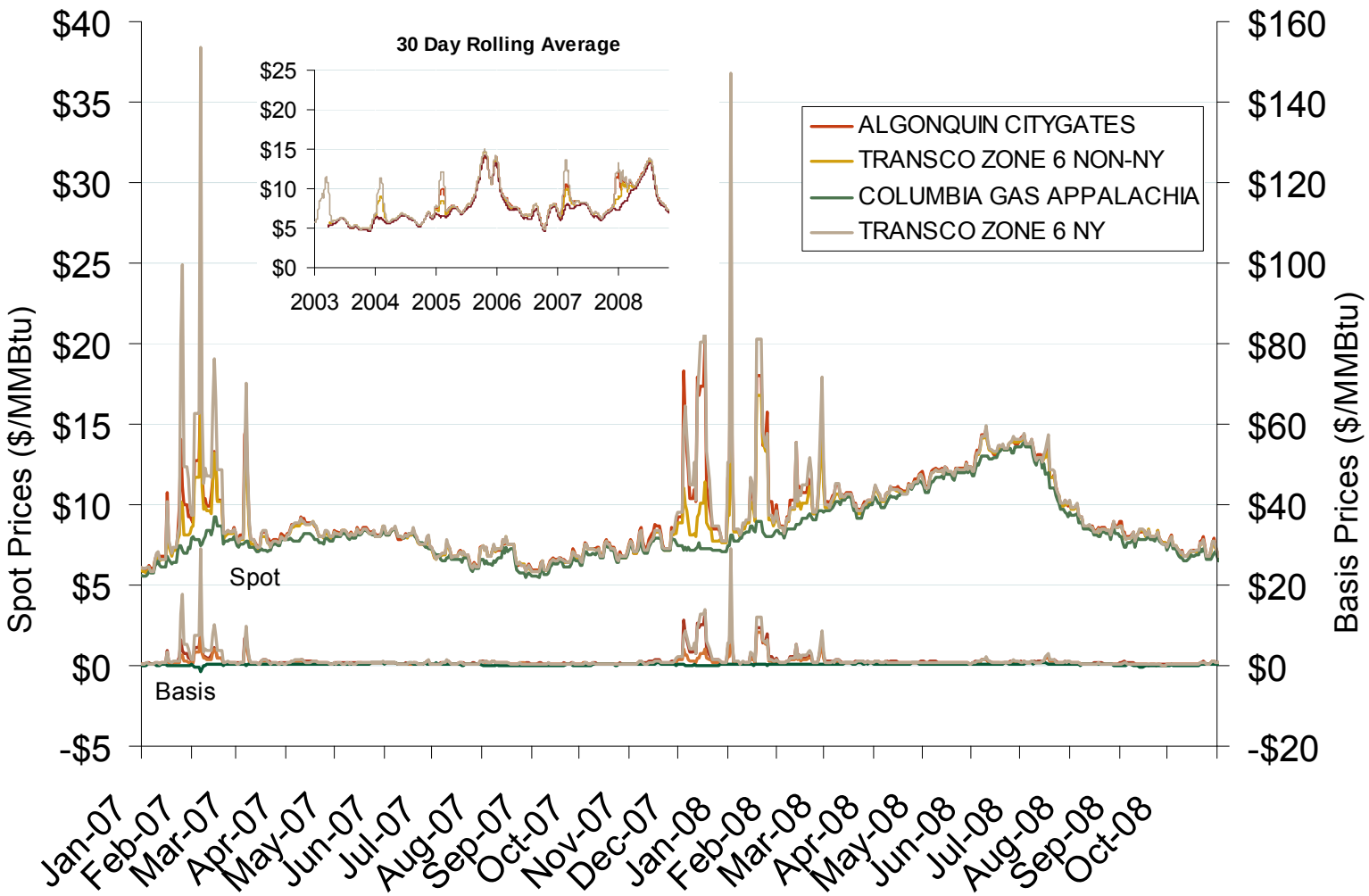
Northeastern Spot Prices and Basis



Source: Derived from *Platts* data.

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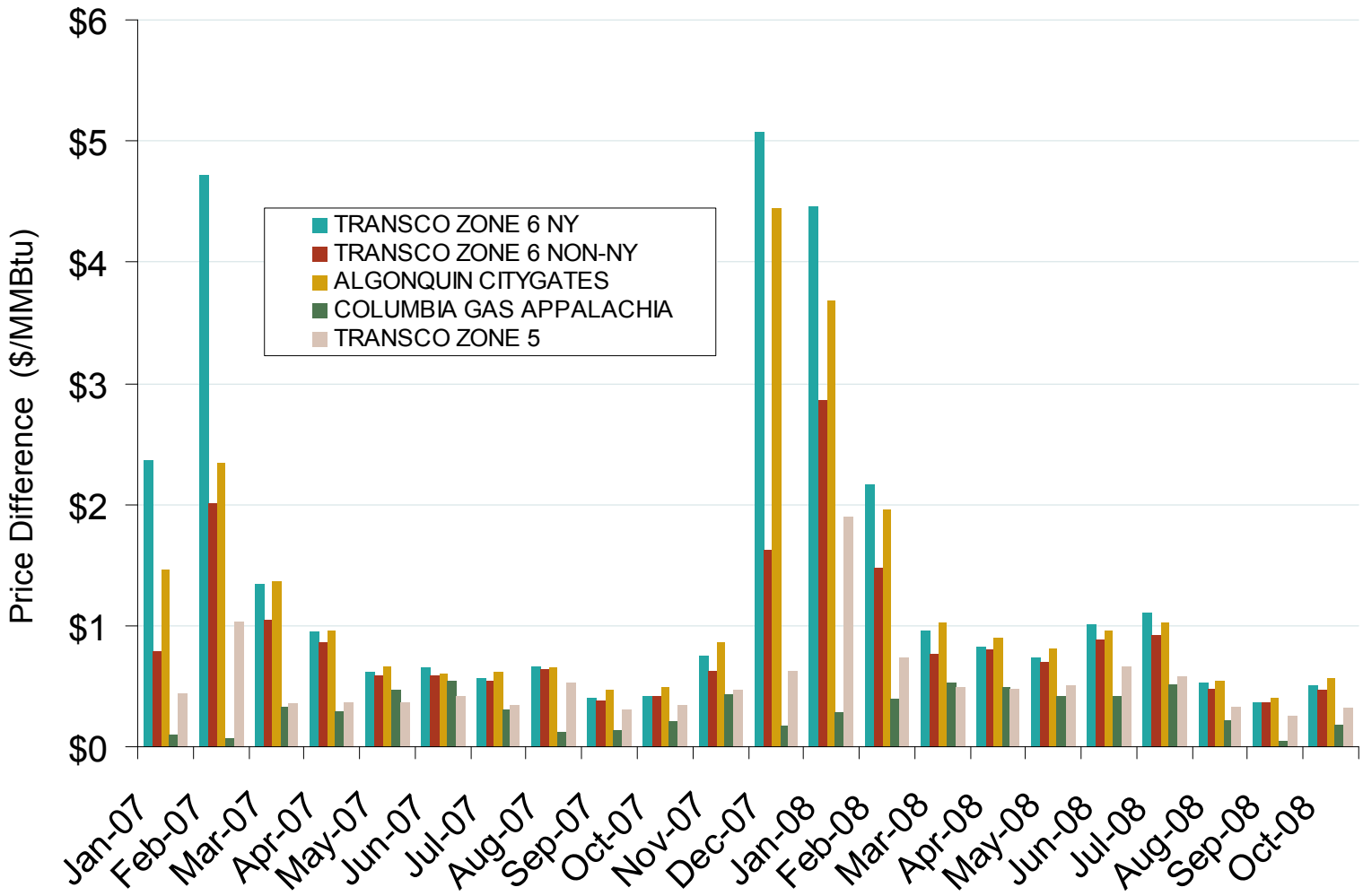
Northeastern Monthly Average Basis Value to Henry Hub



Source: Derived from *Platts* data.

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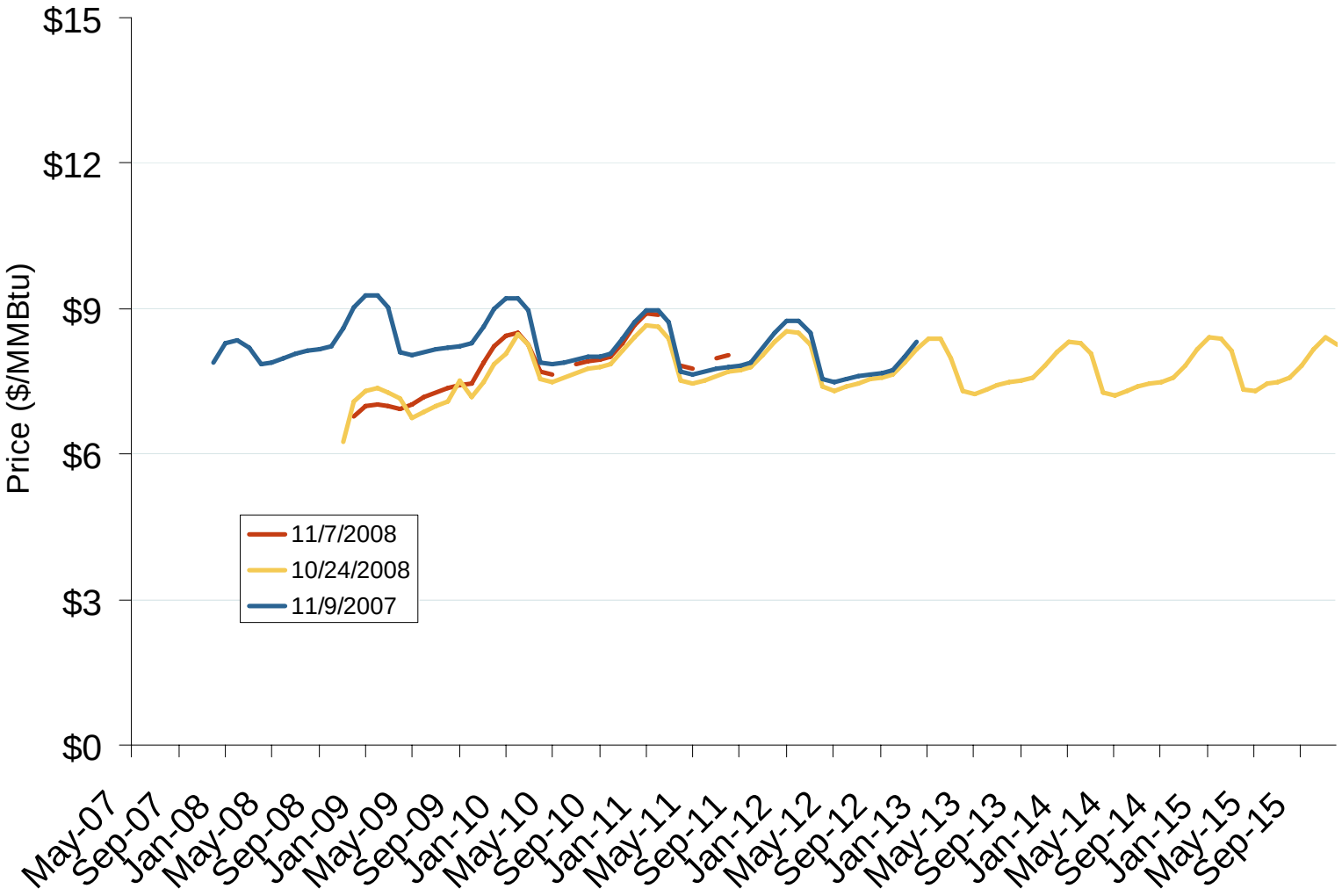
NYMEX Natural Gas Forward Price Curve



Source: Derived from *NYMEX* data.

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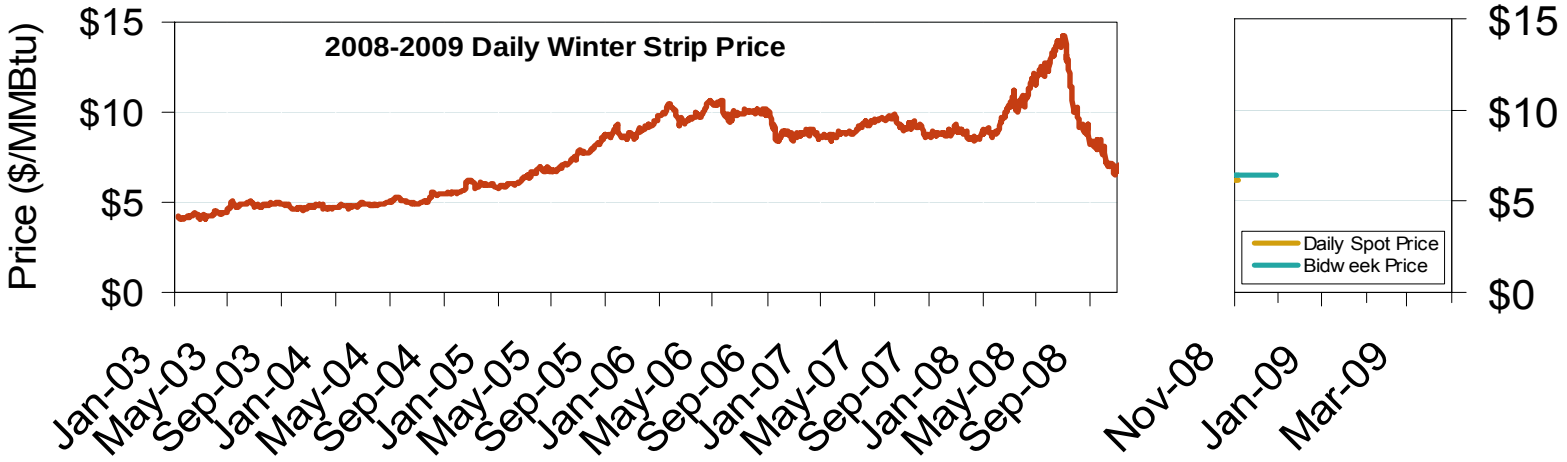
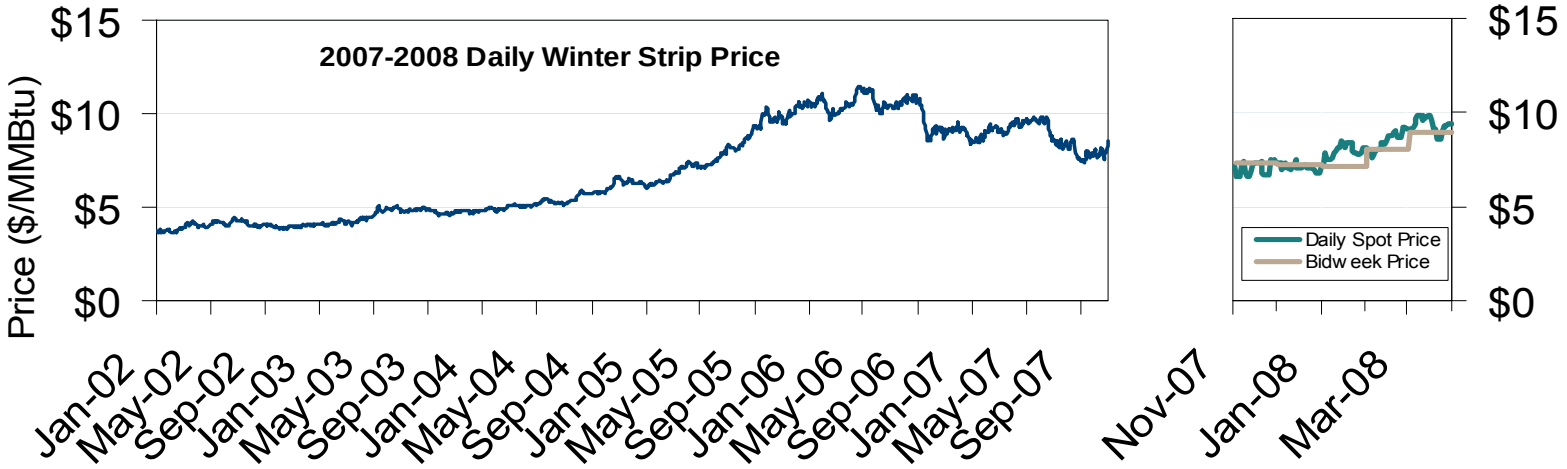
Natural Gas Winter Futures Strip and Daily Henry Hub Spot and Bidweek Prices





Source: Derived from *Platts* and *Nymex* data.

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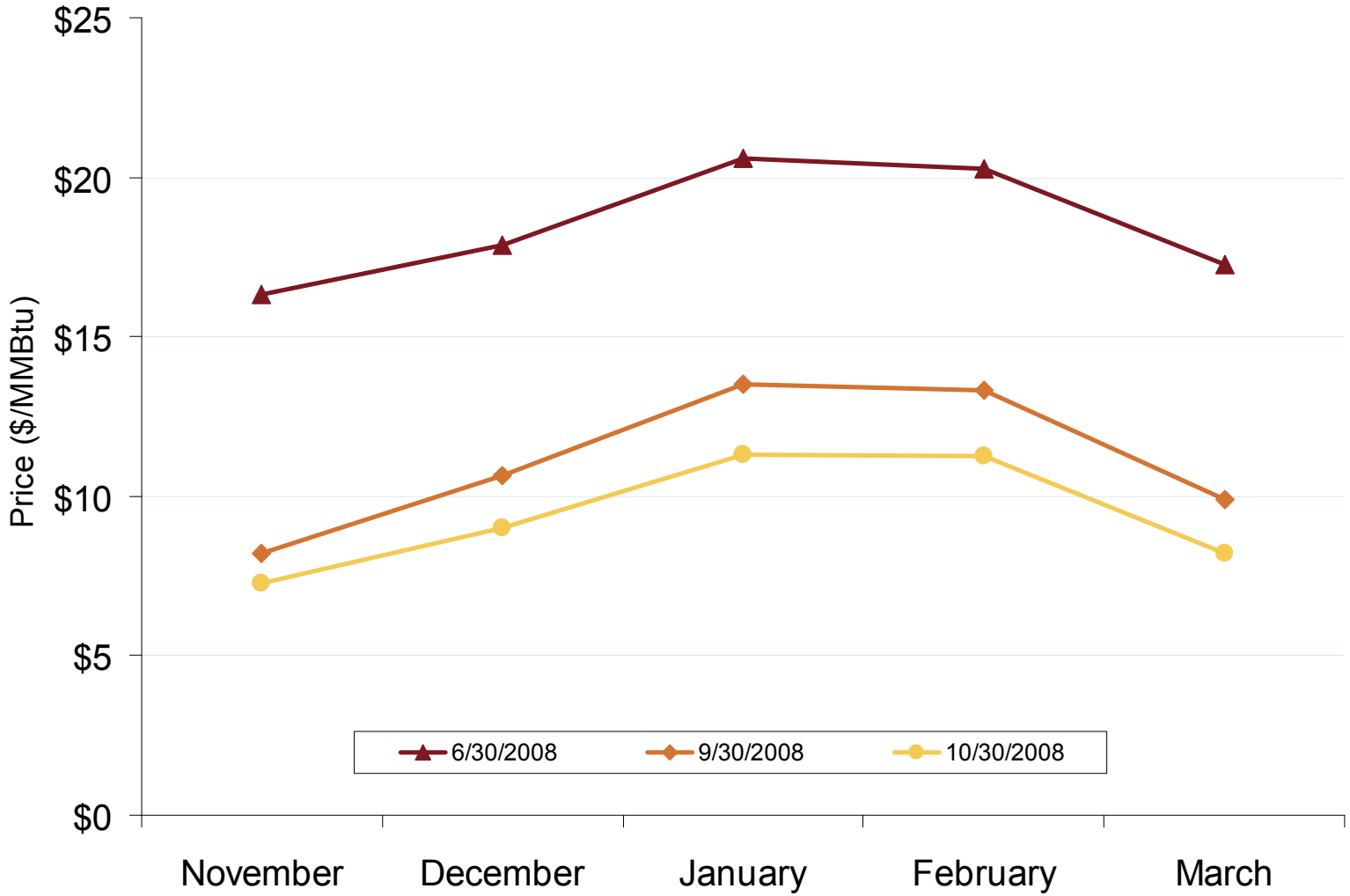
Forward Basis Swaps for Transco Zone 6



Source: Derived from *Bloomberg* data.

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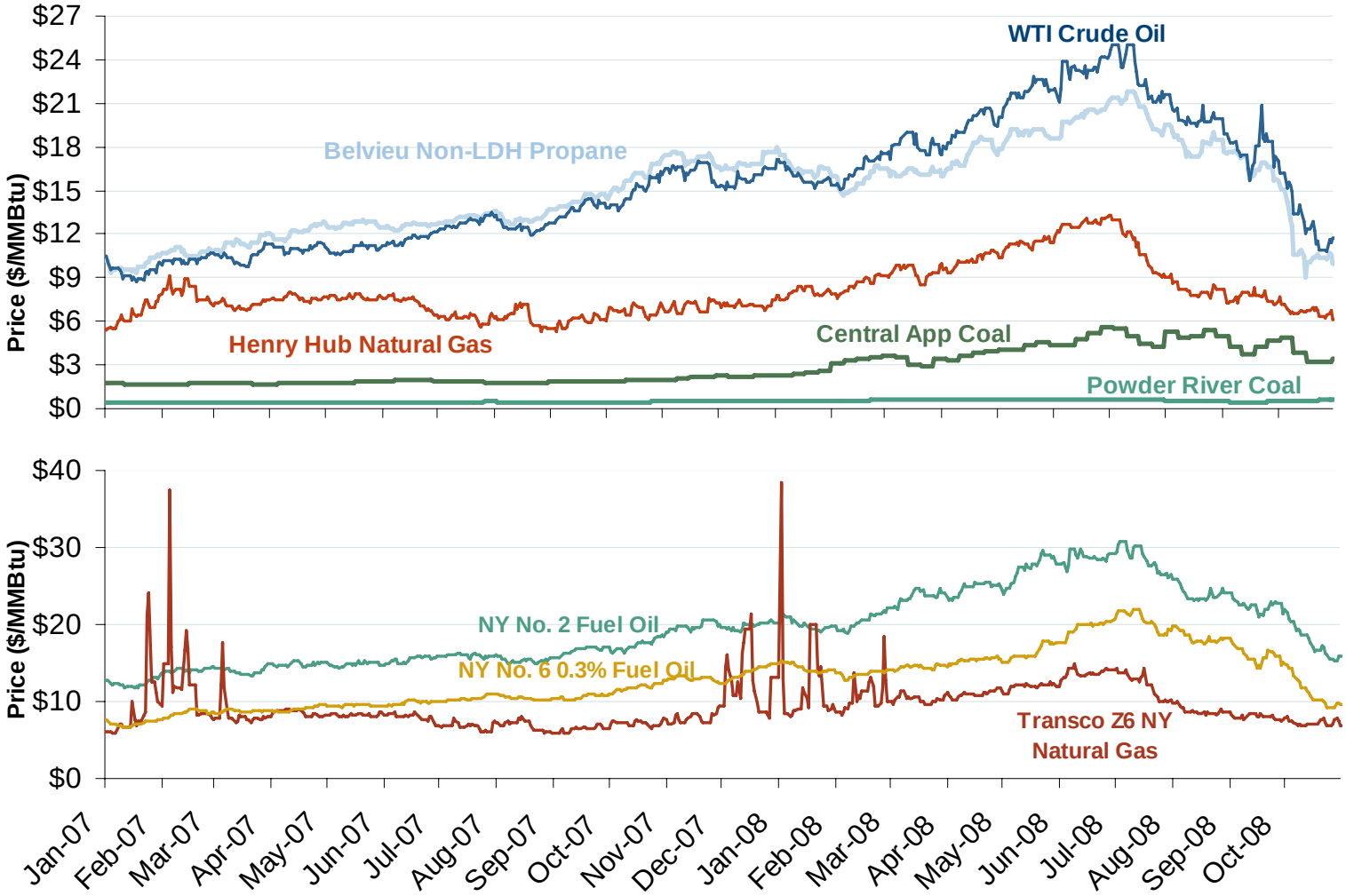
Oil, Coal, Natural Gas and Propane Daily Spot Prices



Source: Derived from *ICE* and *Bloomberg* data.

Note: Coal prices are quoted in $/ton. Conversion factors to $/MMBtu are based on contract specifications of 12,000 btus/pound for Central Appalachian coal and 8800 btus/pound for Powder River Basin coal.

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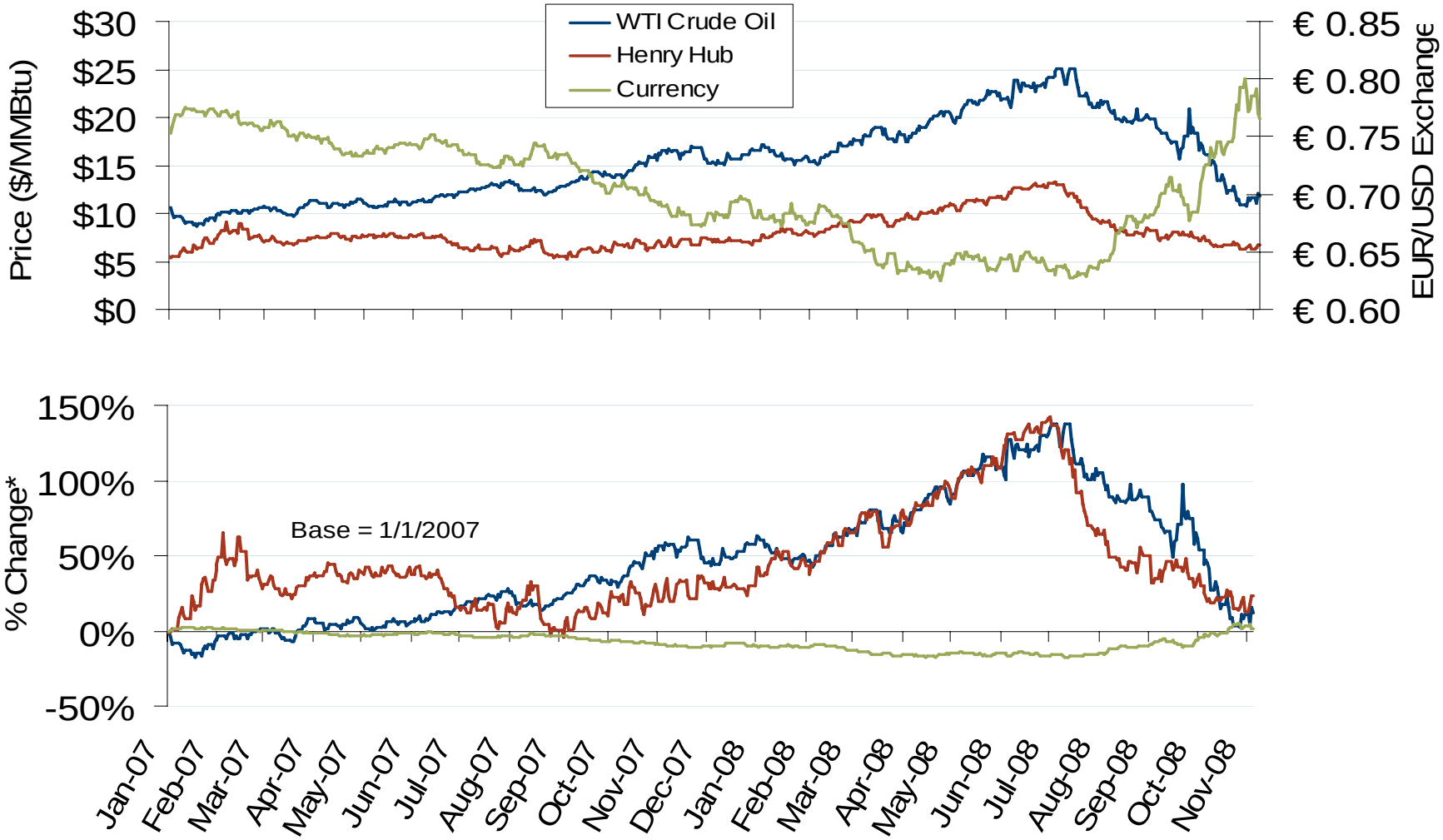
Oil, Natural Gas and Currency Spot Prices



Source: Derived from *Bloomberg* data.

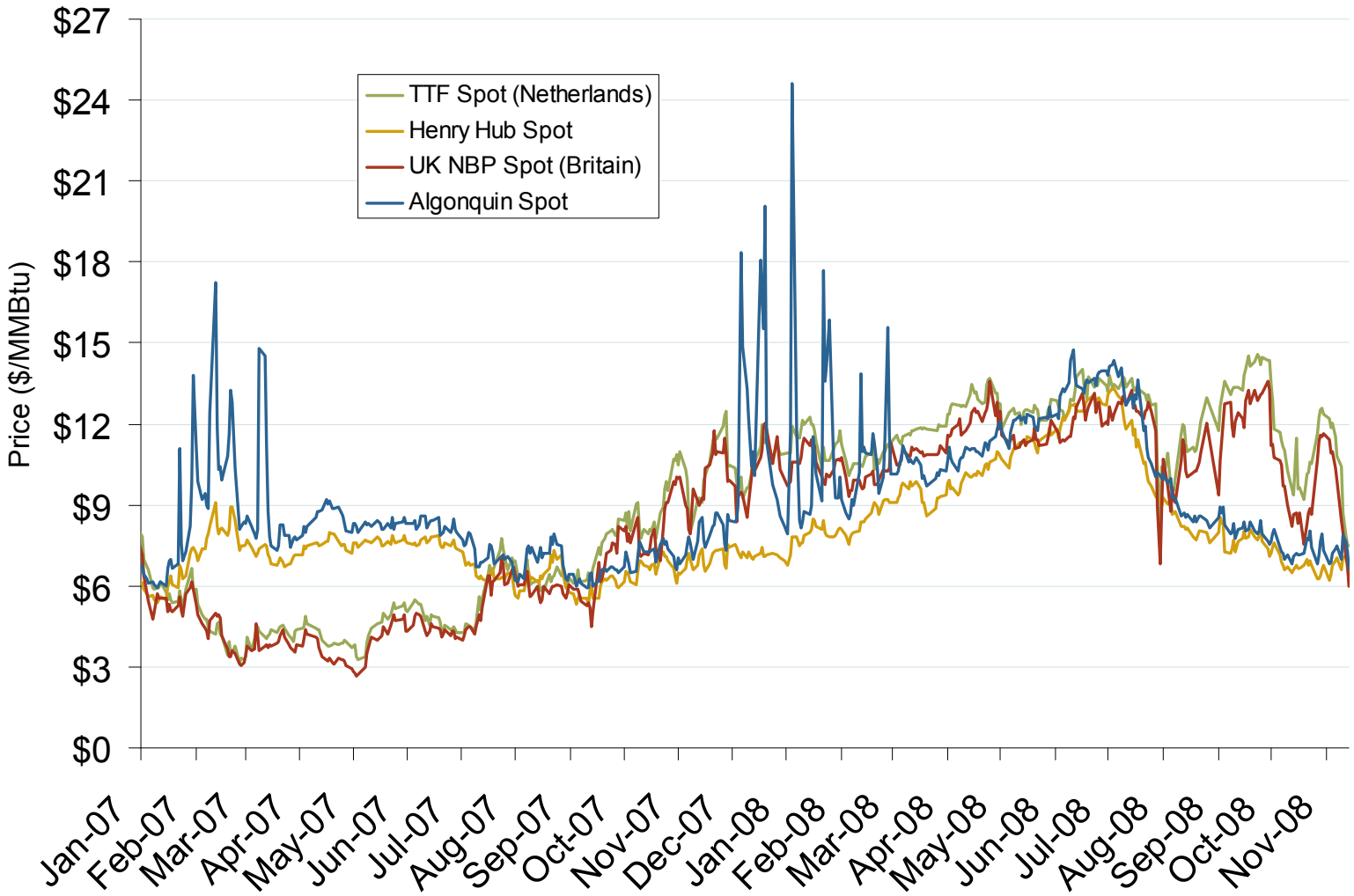
Updated November 7, 2008

World LNG Estimated November 2008 Landed Prices

Source: *Waterborne Energy, Inc.* Data in $US/MMBtu.
November 2008 Northeast Snapshot Report

Updated November 7, 2008

Atlantic Basin European and US Spot Natural Gas Prices



Source: Derived from *Bloomberg* and *ICE* data.

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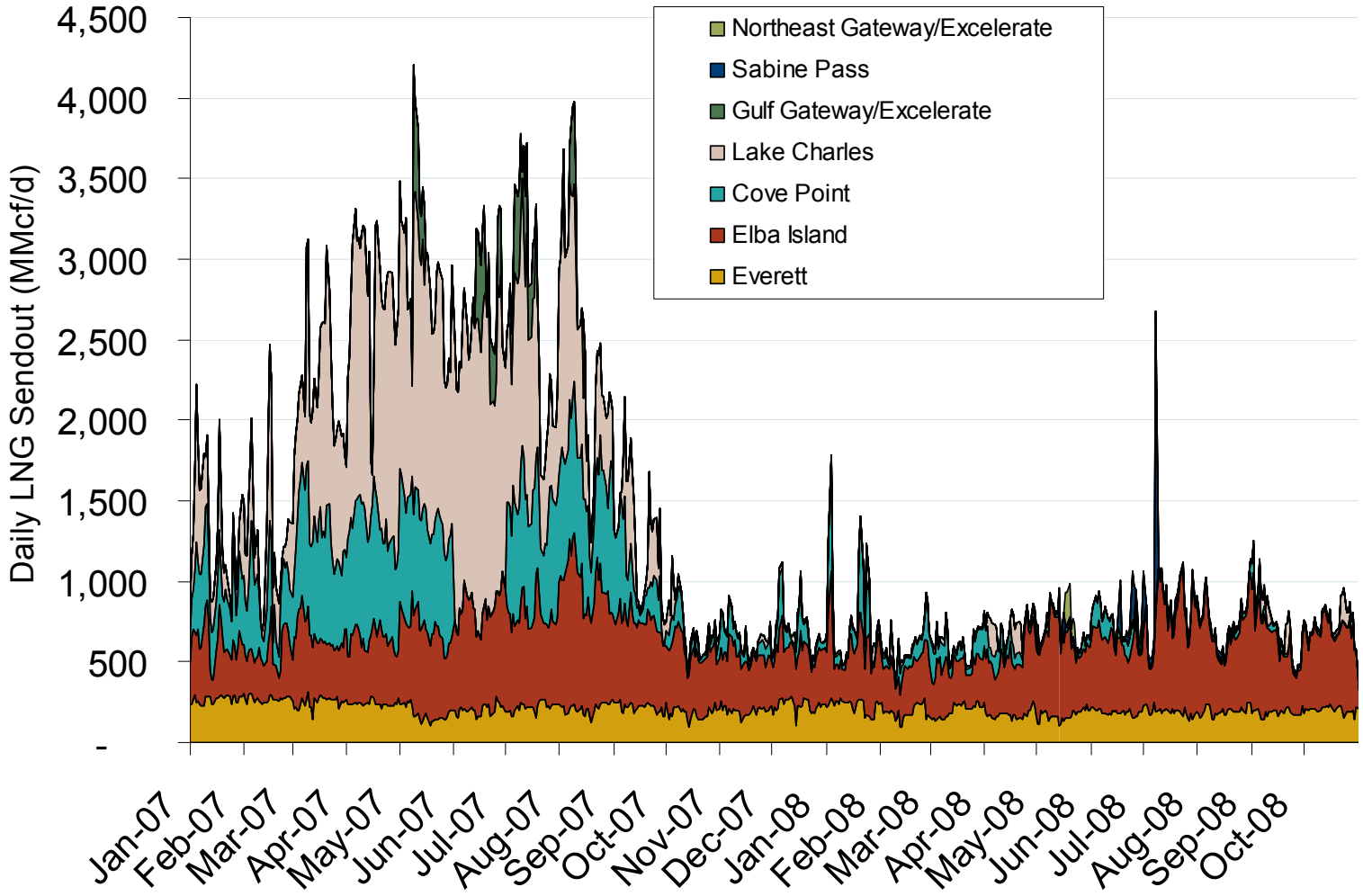
Daily Gas Sendout from Existing U.S. LNG Facilities



Source: Derived from *Bentek* data. Excludes Everett LNG delivered via truck and consumed by the Mystic plant as well as Freeport LNG which flows via intrastate pipelines.

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